



GENERAL PLAN

City of San Carlos, California

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GENERAL PLAN

City of San Carlos, California

Approved by the San Carlos Planning Commission
Resolution Number 1984-2, April 16, 1984

Adopted by the San Carlos City Council
Resolution Number 1985-3, January 14, 1985

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THE PLANNING PROCESS

What Is A General Plan And What Is Its Purpose?

The General Plan is an important land management tool for use by the community and its government officials. It provides a common base of understanding for everyone involved in matters related to community conservation and development and it sets forth community goals as well as procedures and policies needed to achieve the goals. The Plan allows informed decisions by joining information to organized action.

A General Plan typically contains both written and illustrative materials. Its maps and diagrams provide a picture of how the community should be developed as time goes on and the Plan's written material provides pertinent background information and the adopted policies and procedures needed for proper community management. The written and graphic materials in the plan should be consistent with one another - neither is subordinate to the other. The General Plan Land Use Map, while normally the principal reference, is not more important than plan policies and programs.

The components of the San Carlos General Plan include the nine elements, four of which have been condensed into two: Land Use, Circulation and Scenic Highways, Community Safety, Seismic Safety, Open Space and Conservation, and Housing.

In summary, the General Plan performs the following functions:

1. The Plan integrates the environmental, social and economic needs and aspirations of the community with the community's natural setting.
2. The Plan allows the collection of a wide range of ideas and considerations into a single comprehensive document.
3. The Plan simplifies the decision making responsibilities of Planning Commissioners and City Council members by enabling the review of all proposals in light of a clear picture of desirable future development.
4. The Plan provides a common base of understanding which enables public agencies and private property owners to relate their projects to a common goal.

5. The Plan embodies policies and procedures essential to effective city management and the timing of public improvements; it thus provides a basis on which the annual city budget can be established.

How Should The General Plan Be Used?

Plan Maintenance and Plan Availability. Copies of the San Carlos General Plan should be available for reference and purchase by the general public at the San Carlos Planning Office. A fee equal to the cost of reproducing the Plan should be charged when copies are sold.

Related Responsibilities:

- . Planning Commission Secretary - The Secretary should be responsible for maintaining an up-to-date list of all amendments to the Plan by date, City Council resolution number and affected element. This list should accompany all copies of the Plan.
- . Planning Director - The Director should be responsible for providing up-to-date copies of the Plan to Department heads, Planning Commissioners and City Council members. Any changes to maps which are a part of the Plan should be the responsibility of the Director and an index to map changes should be kept.
- . Planning Commissioners - Commission members should have a copy of the Plan available as a decision-making reference at each public meeting.
- . City Council - Council members should have a copy of the Plan available as a reference on planning matters at each public meeting.
- . City Department Heads - Department heads should have a copy of the Plan as a reference when asked by the City Manager or Planning Director to respond with comments on planning matters.

Plan Reference. Reference to the San Carlos General Plan should be a normal part of the decision-making process of the Planning Commission and where appropriate, by the City Council. The Plan is a principal reference against which privately sponsored planning and development proposals should be judged. It is also a principal reference for proposals initiated and recommended by the Planning Commission to the City Council.

therefore should reserve the right to request additional environmental information for projects as they come.

How Is The General Plan Related To Zoning?

San Carlos' General Plan provides a broad land management policy framework which contains both written material and maps aimed at guiding the development and enhancement of the City. Once a determination has been made in the General Plan as to the optimum land use in each part of the City's jurisdiction, detailed limitations on the type and extent of use of individual properties should be adopted. These detailed limitations are commonly described by zoning and adopted by the City Council as a Zoning Ordinance. Zoning is one of the strongest tools for implementing the General Plan but it is not the only one. Other implementing mechanisms are the Subdivision Ordinance, Specific Plans, purchase, easements, capital improvement plans and so on.

By State Law (Government Code Section 68560) the zoning of land must be consistent with the adopted General Plan. If the General Plan describes a range of residential densities or land use intensity the designation may encompass several zoning categories so long as the maximum designated General Plan intensity is not exceeded. If the General Plan is amended or revised, the zoning of land must also be reviewed and amended for consistency. The zoning revision is done in conformance with the procedures set forth in the Zoning Ordinance. There must be a minimum period of two weeks between any hearings on a General Plan amendment and subsequent hearings on zoning revision.

How Is The General Plan Revised And How Often?

The General Plan and amendments to the Plan are typically adopted by resolution of the Planning Commission and City Council. A minimum of two public hearings is required for any amendment, one before the Planning Commission and one before the City Council. More hearings may be held at the discretion of these decision making bodies. Following the conclusion of the Planning Commission review, a recommendation is sent to the City Council. A final decision is rendered following the City Council hearing. If any changes in the Planning Commission recommendation are proposed by the City Council the matter must first be returned to the Planning Commission for a report before final action by the Council is taken.

Many facets of a community are in balance in the General Plan. Thus, revision of the General Plan is a serious matter and should not be done without careful thought. However, to be an effective management

tool the Plan should be reviewed and updated periodically and any changes should be made when it can be determined that an amendment will result in a revised plan which is as good or better than the original.

State Law mandates periodic review of the Plan but also recognizes the importance of avoiding plan changes without careful review. Therefore, State Law limits, to three, the number of revisions to any one of the mandatory General Plan Elements in any one calendar year.

INTRODUCTION

The Planning Context

San Carlos is one in a chain of peninsula communities which lie between the foothills of the Santa Cruz Range and the San Francisco Bay in San Mateo County. Community members of San Carlos are proud of the friendly character of the City, which has retained an intimate atmosphere usually found only in smaller communities. This community pride may well be attributable to a well-planned balance in San Carlos between commercial, industrial and residential land uses. The community balance is evidenced by attractive residential districts in the west, the industrial area east of El Camino Real providing a broad employment tax base, and a downtown shopping district running along El Camino Real and Laurel Street which separates the industrial and residential uses. Residents of San Carlos regard this downtown area to be the community focus, and it includes almost 300 shops and restaurants.

Another major asset of San Carlos is its location. San Carlos is located equidistant from two of California's major metropolitan areas - San Francisco approximately 23 miles north, and San Jose approximately 27 miles south. This provides City residents with a wide range of entertainment, employment, business and service opportunities.

Regional Setting

The City of San Carlos is located in San Mateo County, California, on the San Francisco Peninsula. It is bounded on the northwest by Belmont, on the north, east, and southeast by Redwood City, and on the southwest by land in San Mateo County. In addition to the area within the city limits, the Harbor Industrial area and several areas to the south and west have been designated by the San Mateo County Local Agency Formation Commission (LAFCO) as within San Carlos' Sphere of Influence. These areas are Devonshire Canyon, Scenic Heights, Palomar Park, and the Hassler Health Home and adjacent properties. The General Plan applies to the entire City of San Carlos. Those areas within the City's Sphere of Influence are also included in the General Plan, but they are actually under the legal jurisdiction of San Mateo County. Exhibit 1 shows the regional location of the City of San Carlos.



0 4 8
Map Scale in Miles

KEY FEATURES OF THE SAN CARLOS GENERAL PLAN

The Plan Concept

The San Carlos General Plan shows the balance of land uses desired to sustain a healthy economy and community unlike developing communities. San Carlos, which is now almost wholly developed, has already established a character and form. The City's General Plan, particularly the Land Use Element, addresses itself to policies and plans regarding the protection and preservation of existing uses, as well as the design of goals and proposals for future development. Most of the remaining developable land, located in the western part of the City, is hilly with rugged terrain and slopes requiring elaborate site preparation and costly extension of community services. Portions of the downtown core area, including a number of single-family dwelling units, have been determined to be under-utilized under the current linear layout; therefore, the Plan addresses the possibility of higher intensity uses in the core area and the consequences of potential redevelopment. Under-utilization of specific industrial parcels as well as quasi-public and public properties, i.e., school sites, are additional topics addressed in the Plan. In summary, the Plan is aimed at strengthening the City's sense of being a well-balanced, vital Peninsula community and enhancing San Carlos' residential environment, downtown shopping area, and industrial zone.

This plan is not a significant departure from the previous General Plan. Any changes between previous and present policy are outlined herein, but the main intent of the General Plan update was to bring all elements of the Plan into a consistent format, to put all mapped information onto a common-scale base map, to include the most recent technical information available to address current issues and to meet all 1983 statutory requirements.

Economic Assumptions

This General Plan recognizes that: "the overwhelming body of evidence measuring the health of the San Francisco Bay regional economy indicates that 1980 marked the end of the prolonged period of substantial economic growth enjoyed since the 1974-75 recession."¹ The 1980 Census revealed significant changes in population structure, lifestyle, labor force participation, job demand, etc... The General Plan for San Carlos assumes that the regional economy will maintain vigor over the next 20 years, although not at the rates which occurred in the 1975-1980 years. The General Plan also recognizes that the challenge of the next two decades will require increasingly imaginative planning by both government and the private sector.

¹ Projections '83, Forecasts for the San Francisco Bay Area,
Association of Bay Area Governments, June 1983.

LAND USE ELEMENT

LAND USE ELEMENT

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LAND USE ELEMENT

INTRODUCTION

Purpose

The Land Use Element is the written and graphic statement of San Carlos' goals, objectives, policies and programs for the future use of land within the City's jurisdiction. The element designates the proposed general distribution, location and extent of the uses of land for housing, business, industry, open space and public purposes. Land areas outside of the city limits but within the City's Sphere of Influence as adopted by the Local Agency Formation Commission (LAFCO) are also included for purposes of suggesting compatible uses in the event of future annexations and as a basis for cooperative planning with other jurisdictions.

Relation to Other Elements

The Land Use Element, along with the Circulation Element are the primary General Plan policy elements. Other elements of the plan, to differing degrees, contain policies or proposals which relate to the Land Use Element. While each land use type has certain basic land area requirements and service needs, the distribution of uses is significantly influenced by the availability of circulation and access, geologic circumstances, noise factors and the desire of residents for open space and aesthetic qualities. Specifically, those elements related to the Land Use Element include Circulation, Housing, Open Space, Conservation, Noise, Scenic Highways, Seismic and Safety.

GOALS AND OBJECTIVES

GOAL: Retain and enhance the community's balanced Land Use Pattern consisting of Residential, Commercial, Industrial, Open Space and Public Uses.

OBJECTIVES:

- . To establish a usable guide for the location, intensity and extent of land uses within the City's area of interest. The guide should function as a useful tool for those desiring to use and improve property as well as those who regulate land use.
- . To create and promote a favorable attitude toward quality business and industry in the community.
- . To encourage an economically viable central retail district.
- . To complete the development of the community's new residential areas and to encourage more intensive uses in the multi-family areas currently in transition.

GOAL: The maintenance and enhancement of quality residential areas within the City of San Carlos.

OBJECTIVES:

- . To provide a variety of housing types and densities directed toward accommodating the needs and desires of the community's residents.
- . To maintain a numerical ratio of approximately 70% of single family dwellings to 30% multiple family dwellings in the City.
- . To locate higher density residential uses near the Central District and lower residential uses in the steeper, Western Hills area.
- . To retain the general high quality of maintenance and living environment existing in the established residential neighborhoods of the City.
- . To provide adequate support facilities within the residential neighborhoods including schools, parks and churches.

GOAL: Enhance the strong local retail sales base existing in the Central District in order to provide employment, an attractive shopping area for local residents, and a diversified tax base for the City.

OBJECTIVES:

- . To encourage uses of ground level building space within the retail core in accordance with the following priorities: retail sales, food and beverage establishments, commercial service (e.g. cleaners, photographers, tailor), personal service, theaters and certain financial institutions.
- . To support a continuing program to upgrade and enhance the attractiveness of the City's commercial areas.

GOAL: Maintenance and enhancement of the San Carlos Industrial Community to provide a substantial employment and tax base for the City.

OBJECTIVES:

- . To encourage industrial diversification and avoid dependence on a single or few industries.
- . To create an environment conducive to the healthy growth and expansion of San Carlos industries.
- . To encourage industrial uses related to electronics and other high technology business, textile manufacture, research and development, and light manufacturing and assembly.
- . To annex that portion of the Harbor Industrial area within the City's sphere of influence at such time as the property owners desire to be annexed.

GOAL: Preservation of an open space system that includes significant land features, needed recreation facilities and environmentally sensitive lands.

OBJECTIVES:

- . To retain Cordilleras, Brittan and Pulgas Creeks as significant open space corridors.
- . To publicly acquire the Hassler Health Home lands for regional open space purposes.

- . To maintain and enhance a park and recreation system that meets the needs and desires of the community.

GOAL: The provision of adequate community services and facilities to make San Carlos a safe, enjoyable and quality community in which to live, work and shop.

OBJECTIVES:

- . To maintain a high level of community public safety services directed toward both prevention of crime, fire and similar occurrences, and the traditional protective functions.
- . To provide quality recreation services and facilities for age groups living in the City.
- . To provide adequate educational facilities for San Carlos residents including schools and libraries.
- . To maintain and enhance the San Carlos Airport general aviation facility as an economically significant facility of County-wide importance.
- . To provide or seek to assure that adequate public utilities are planned and constructed to accommodate the population of the City.

RESIDENTIAL LAND USE

General Description

Residential areas are designed to contain housing and other related facilities such as elementary and intermediate schools and churches. Density designations expressed in dwelling units per gross acre are used in the plan rather than specific housing type (e.g. single family-detached). Residential land use determines the demand for schools, business and employment areas, public facilities, roads and parks.

Residential Land Use Categories

Residential Densities. Planned residential densities are based on the number of dwelling units per gross acre. A gross residential acre is defined for developed and undeveloped land as follows:

- . For developed land this term shall include one-half the perimeter streets and all interior streets, and it shall exclude all other land not part of the residential development, including vacant lands.
- . For undeveloped land the term shall include one-half the perimeter streets and all land which has been or is to be developed for residential purposes and interior streets.

Allowable maximum densities are generally applicable to specific properties, however density transfer between different properties may be permitted in Planned Community Districts.

TABLE A: RESIDENTIAL DENSITIES

RESIDENTIAL LAND USE CATEGORY	MAXIMUM DENSITY (UNITS PER GROSS ACRE)	MINIMUM LOT AREA PER DWELLING (SQUARE FEET)	ZONING DISTRICT REFERENCE
Single Family, Low Density	3	10,000	R-1-LD
Single Family	6	5,000	R-1
Multiple Family, Low Density	15	2,000	R-3-G
Multiple Family, High Density	35 - 60	1700 - 725	R-3 & R-4

Single Family, Low Density. The single family, low density designation is primarily applied to the Western Hills of the community generally west of Alameda de las Pulgas. This land use density is intended to minimize environmental damage to the steeper hillside topography existing in this area. While the maximum density permitted under this designation slope (see section entitled "Hillside Development Criteria"). The conventional single family detached home is the standard structural type planned for these areas.

Single Family. The single family residential designation refers to the use of land primarily for single family detached residences. This land use density is intended to retain and promote the residential densities currently existing in the neighborhoods east of Alameda de las Pulgas and north of San Carlos Avenue. While a maximum density is designated within this category, lower densities in specific areas or neighborhoods may be more appropriate due to established lot patterns, environmental concerns or respect for natural resources. Any new subdivision in the single family designated areas shall be limited to a 10,000 square foot lot size or a lower density as specified by the hillside development criteria. The conventional single family detached home is the standard structural type planned for these areas.

Multiple Family, Low Density. The multiple family, low density designation refers to the use of land for lower density apartment, condominium and townhouse projects. This type and density of residential development is planned for location in specific areas of the Western Hills. The concept involves concentration of residential units on more usable sites and density transfer techniques to preserve hillsides and canyons in permanent open space. The type of structure normally constructed in these areas are low rise (2-3 story over parking) apartments and townhouses.

Multiple Family, High Density. This land use category represents the most intensive form of residential development in San Carlos. The high density residential land use category provides locations for more concentrated living accommodations located adjacent to the commercial facilities of the Central District. Here, densities of up to 60 dwelling units per acre are permitted. Less intensive multi-family areas are located on the periphery adjacent to single family residential development. Here, densities of up to 35 dwelling units per acre are permitted. These higher density uses are generally designed to be located near commercial activity and major transportation routes.

Residential Location Principles

The principles used to plan and locate the several residential uses are:

Single Family, Low Density.

- . Steeper areas where topographic features, geologic hazards, potential slope stability concerns and accessibility indicate the need for low development intensity.
- . Generally west of Porto Marino Drive.

Single Family.

- . Traditional single family neighborhoods of San Carlos on gently sloping Bay plain, in rolling hills north of San Carlos Avenue and the foothills east of Porto Marino Drive.

Multiple Family, Low Density.

- . Limited to existing areas in Western Hills, adjacent and west of San Carlos High School and in the Brittan Heights condominium area near the intersection of Brittan Avenue and Crestview Drive.

Multiple Family, High Density.

- . Buffer of high density uses designed to separate Central District and Laurel Street/El Camino Real commercial areas from the single family districts to the west.
- . Area extends west along San Carlos Avenue and north of Pulgas Creek to Cordilleras Avenue.

Hillside Development Criteria

While most of the hillsides and canyons of San Carlos have been developed or acquired for open space purposes, some areas remain with subdivision and development potential. Development in these areas requires careful design and implementation in accordance with established policies and criteria. Consideration must be given to the elements of structure design; including height, bulk, design concept, plus site planning; including grading, incorporation of natural site features,

visibility, relation to views, site area, and proximity to public facilities. The following criteria for areas with ten percent slope or greater are established for hillside residential development:

1. Zoning of parcels with development potential should generally be the Planned Community District.
2. Minimum lot size in hillside areas should be 10,000 square feet and the minimum lot size should increase with increasing slope.
3. The site and structural design should relate to the natural features of the property including topography, trees, vegetation, land forms and drainage channels.
4. Grading and removal of earth material should be limited to the lowest practical amount consistent with other principles, policies and standards.
5. Building sites should be planned to orient houses to the downhill side in relation to the street or access drive.
6. In areas of potential high fire hazard, exterior building materials should be non-combustible.
7. Unexcavated areas below structures on hillsides should be completely enclosed with non-combustible materials to prevent exposure to wildfire hazard.
8. Public facilities such as roads and utilities should be designed and located to produce the least practical impact on the hillside environment. Design should respect the natural topography, produce the least visual impact, and require the least grading, while remaining consistent with public health and safety standards.

Schools

Public and private schools are shown on the plan with a multiple use designation. Changes in enrollments have caused the closure of some schools resulting in the potential for changed land use on parcels once considered permanently established in public use. The primary planned use of these sites remains for school and associated recreation purposes. However, the underlying or basic land use policy provides that the existing recreational portion of the sites should be continued as park use, with the balance of the property to be used for residential

purposes, uses consistent with the use of existing buildings and consistent with uses in the surrounding neighborhood should school closure occur. It is the City's desire to retain the existing park uses of school sites as a permanent neighborhood amenity.

Residential Land Use Policies

1. New developments in existing residential neighborhoods shall be designed to reflect the existing housing type, with emphasis placed on preserving the neighborhood character and stability.
2. All new development of residential projects involving multi-family structures, townhouses or planned communities shall be reviewed by the Planning Commission's Architectural Committee for compliance with site planning, architecture and landscape criteria prior to approval.
3. Residential structures shall be designed to be compatible with existing structures in the vicinity, avoid obstructing views from adjacent structures or views of community importance, avoid interference with the right or ability to use solar energy, and be consistent with the community design principles.
4. Re-use of surplus school sites shall be in conformance with the underlying land use designation specified on the land use diagram with retention of recreation areas for park use.
5. All utilities installed in conjunction with new construction shall be placed underground.
6. All new residential uses shall contain fire/smoke alarm or suppression devices in compliance with fire department criteria.
7. Minimum lot size for all future land divisions shall not be less than 10,000 square feet. This policy does not apply to lot line adjustment divisions where original lots contain less area. Further, in areas east of Alameda de las Pulgas/San Carlos Avenue, the minimum lot size of 10,000 square feet shall not apply to those land divisions where 50 percent or more of the existing parcels within a 500' distance of the boundary of all parcels to be divided contain areas of less than 10,000 square feet. In that case, the minimum lot size shall be the average of all of the existing parcels within a 500' distance of said boundary.
8. Conversions of existing rental housing stock to condominium shall be permitted only when it can be shown that:
 - a. The vacancy rate in rental units in the City is in excess of one percent.

- b. Adequate provision is made for the protection of tenants including relocation assistance.
 - c. The structure substantially meets current building and fire regulations.
9. A contribution of land and/or fees in lieu of land dedication shall be required as a condition of approval of all new residential subdivisions in San Carlos. The total contribution (which may include a combination of dedicated land, fees or recreation facilities) shall be equivalent to the provision of 2.5 acres of land for each 1,000 persons projected to live in the proposed development.
 10. Some residential uses may be considered appropriate when mixed with commercial or industrial uses, when projects are designed to avoid conflicts between the uses. Such conflicts include traffic, parking, noise, dust and odors.
 11. Minimum lot sizes in hillside areas (defined as areas with average cross slopes greater than ten percent) shall be related to the slope and shall not be less than:

AVERAGE CROSS SLOPE	MINIMUM LOT SIZE
9-9.9%	10,000 Square Feet
10-14.9%	10,000 Square Feet
15-19.9%	10,000 Square Feet
20-24.9%	12,000 Square Feet
25-29.9%	20,000 Square Feet
30-34.9%	40,000 Square Feet
35% plus	2 Acres

12. Parcels with development potential of five lots or more shall be rezoned to the Planned Community District prior to approval of a tentative subdivision map.
13. Developments in Planned Community Districts shall be subject to architectural and site plan review. The design shall relate to the natural features of the property including topography, trees, vegetation, land forms and drainage channels.

14. Grading and removal of earth material shall be limited to the lowest practical amount consistent with other principles, policies and standards.
15. Hauling of earth materials on or off site shall not be permitted in residential subdivision developments in the Western Hills area (west of Alameda de las Pulgas and south of San Carlos Avenue).
16. Sites shall be planned to orient houses to the downhill side in relation to streets and access drives wherever practical.
17. In areas of potential high fire hazard, exterior building materials shall be non-combustible.
18. Unexcavated areas below structures on hillsides shall be completely enclosed with non-combustible materials to prevent exposure to wild-fire hazard.
19. Public facilities such as roads and utilities shall be designed and located to produce the least practical impact on the hillside environment.
20. Annexation of all or portions of unincorporated areas shall only be permitted when public services and facilities meeting City standards are available to the lands proposed for inclusion in the City. All streets, sewage and drainage systems and police and fire protection must meet City standards. In no case shall the City taxpayer be burdened with paying for additional services for newly annexed lands. Funds for these services shall be generated through the establishment of special assessment districts or they shall be paid for by the developer/property owner.

Because of unique service provision and flooding problems associated with the unincorporated Devonshire Canyon area, it shall not be annexed unless 1) the above conditions are met, and 2) a lower than conventional density is maintained.

21. Residential uses on upper floors of commercial structures shall be encouraged in the South Laurel Street area. Densities may be allowed up to 60 units per acre.
22. The City shall design and implement a "community entry" beautification program at the Holly Street access to the City. The entry may consist of landscaping, monument signing, open spaces and other efforts designed to provide identity and a gateway to San Carlos.

23. The City shall design and implement a Planting and Beautification program along Brittan Avenue from the proposed U.S. 101/Brittan Avenue interchange to Old County Road. The intent of this policy is to achieve a uniform landscaped entry into the City. Implementation could include landscaping as part of the new interchange project, installation by developers of adjacent property and City installation.
24. Development of the 80± acre property located in the unincorporated territory southwesterly of Los Vientos Way shall consist of low density residential uses at a maximum density in accordance with the San Carlos Slope Density formula. Residential uses should be single family detached and may be clustered along the ridge. Site design should avoid direct placement of units on the ridge. The steeper portions of the property should remain in open space.

COMMERCIAL LAND USE

General Description

Commercial areas are designed to contain a variety of business, service and office establishments. These areas are important because of the employment opportunities they represent and because the businesses involved provide goods and services needed by the community. The demand for commercial floor area is dependent, to a large extent, upon the market area population, disposable income, the regional demand for goods and services, and major regional employment centers.

Commercial Land Use Categories

Three commercial land use categories are described in the Land Use Element and are distinguished from one another by their type and intensity of use. Intensity of commercial development is a function of floor area ratio, parking and landscape requirements. Floor area ratio is the total gross area of all floors of a building divided by the total lot area.

TABLE B: COMMERCIAL USE INTENSITY

COMMERCIAL LAND USE CATEGORY	USE INTENSITY (FLOOR AREA RATIO)	ZONING DISTRICT REFERENCE
Retail Core	3.0	C-R, C-P
Highway Service	2.0	C-S
Service and Convenience	1.0	C-2

Service and Convenience Commercial. This designation is applied to areas used for retail sales, services, offices, personal service establishments and convenience shopping facilities. Examples of the types of uses found in the service and convenience areas include grocery stores, beauty salons, shoe repair, cleaners, business offices, doctor and dentist offices, convenience markets, small restaurants and similar uses. Higher density residential uses may also be appropriate in service and convenience areas provided adequate parking and other facilities are available for each individual use.

Retail Core. The retail core consists of two directly related use areas; the central retail core and the central business perimeter districts. The central retail core is intended for the most intensive commercial uses in the City. Ground floor uses are generally limited to retail, personal service, food and beverage establishments, certain restricted services, entertainment facilities and certain financial institutions. Offices, financial services and transient residential uses are allowed on the upper floors of multiple story buildings. Higher density residential uses may also be appropriate in the central retail core district where adequate off-street parking and other facilities are available. Such uses may be appropriate on all floors in locations other than fronting on Laurel Street or San Carlos Avenue. Such residential use would add to the market area population and more fully utilize facilities of the central district.

The central business perimeter district defines and complements the central retail core area and provides a buffer between the intensive retail uses and the adjacent multiple family areas. Uses within the central business perimeter area are more service oriented (e.g., repair shops, food service, medical offices, auto part sales). However, retail sales are also a major use in these areas. Here also, higher density residential uses may be appropriate where adequate facilities are available.

Standards should be incorporated into the zoning ordinance in an effort to insure high quality development in mixed use projects. Standards for minimum dwelling unit size, usable open spaces and amenities should be included. Mixed use projects should be zoned Planned Community (PC) District.

Highway Service. Highway service areas contain uses which are generally automobile related business and trade activities. Since these commercial activities are dependent on highway traffic for customers, they contract with retail commercial centers which are dependent on the attraction created by other commercial enterprises in the immediate vicinity. Some examples of highway service uses are restaurants, auto parts and supply houses, real estate and insurance offices, on and off sale liquor establishments, hotels and motels, service stations and animal clinics.

Commercial Location Principles

The principles used to plan and locate several commercial uses are:

Retail Core.

- . Located with direct access to major arterials
- . Buffered from nearby residential uses
- . Centered along Laurel Street, the traditional access

road between Arroyo and Holly Street.

- . Traffic pattern conducive to pedestrian movement throughout the area.

Highway Service.

- . Adjacent to major highway facility (El Camino Real).
- . Provides buffer from heavy traffic carrying roadway.

Service and Convenience.

- . Good access available from major thoroughfare.
- . Buffers adjacent to residential areas from El Camino Real.

Central District

This is the primary retail commercial area for the City. As such, it should offer a wide range of community commercial sales and service as well as office uses. While the retail commercial aspects of the area should be emphasized, residential and office uses may be appropriately located on upper floors or at selected locations within the area. Banks and other financial institutions may be located on ground floors, however their numbers should be regulated to avoid substantially reducing the amount of retail space available. Care should be taken when designing and reviewing mixed use proposals to ensure the availability of adequate parking, creation of a compatible environment which mitigates potential adverse effects of noise, traffic, odors and other similar factors. A more precise plan for the central district has been adopted as an element of the General Plan entitled "The San Carlos Central District Plan".

Commercial Policies

1. The central district retail core shall be developed as a primary commercial facility in accordance with the San Carlos Central District Plan. Primary uses in this area are retail, commercial and financial. Secondary uses may include offices and higher density residential.
2. Uses of ground level building space within the retail core shall be in accordance with the following priorities: retail sales, food and beverage establishments, commercial service, personal service, entertainment facilities, and certain financial institutions.

3. Financial institutions, generally including banks, savings and loans, and brokerage houses, located on the ground floor in the retail core shall be spaced so they are not closer than 500 feet from another such use.
4. The service and convenience commercial areas shall be developed as important community support facilities. Uses within these areas include retail sales, services, offices, personal service establishments, convenient shopping facilities, and higher density residential.
5. Adequate off-street parking shall be provided in commercial areas. Opportunities for reduction in space devoted to parking, such as designing a portion of the area for compact cars or time-sharing of space, may be acceptable.
6. Should future demand warrant, the City shall consider use of multiple level parking facilities to provide increased space where available land is limited.
7. Off-street parking facilities shall be designed to connect with adjoining facilities wherever possible and to allow for joint use by customers.
8. All utilities installed in conjunction with new construction shall be placed underground, except, where due to size, load capacity or location, such undergrounding would not be feasible.
9. Fast food restaurants shall be spaced so they are no closer than 1,000 feet from another such use.
10. All new development of commercial projects shall be reviewed by the Planning Commission's Architectural Committee for compliance with site planning, architecture, signing and landscaping criteria prior to approval.

INDUSTRIAL LAND USE

General Description

Industrial areas provide working and employment centers for the community and surrounding region. Emphasis is placed on light manufacturing and assembly, distribution of manufactured products, research and development and industrial supply. Incidental uses may include warehousing, offices and limited retail sales. Generally, commercial and residential uses are not appropriate within these areas. However, there may be certain exceptions where such uses do not conflict with the primary industrial land use.

Good transportation facilities and access are essential to the continued success of industrial areas. Location and close proximity to rail and highway transportation is very desirable. Airport facilities within a short distance are highly advantageous.

Industrial areas should be aesthetically pleasing as well as functional. Architecture should reflect good design and blend with the existing buildings in the area. Older, metal buildings should be amortized and removed due to public safety considerations. Open storage areas should be screened from view. Adequate loading and parking facilities are essential to the efficient functioning of public access streets and the intensity of activities in these areas.

Industrial Land Use Categories

A single industrial land use category is described in the Land Use Element. The intensity of use in planned industrial areas is based on floor area ratio (see section entitled "Commercial Land Use Categories" for definition).

TABLE C: INDUSTRIAL USE INTENSITY

INDUSTRIAL LAND USE CATEGORY	FLOOR AREA RATIO	ZONING DISTRICT REFERENCE
Planned Industrial	2.0	PM-1, PM-2, M-2

Planned Industrial. The planned industrial designation is intended to encompass a broad range of employment and industrial uses. This area provides space for manufacturing and assembly establishments, electronic uses, distribution centers, research and development facilities and related

warehousing, office, retail and service establishments. Diversification of industrial uses is to be encouraged as a means of protecting the City against economic fluctuations. Planned industrial areas should be aesthetically pleasing as well as functional. Uses should adhere to performance standards related to radioactivity or electric disturbances, fire and explosion hazard, vibration, glare, liquid or solid waste disposal and noise.

Industrial Location Principles

The principles used to plan and locate the industrial uses are:

- . Located east of the Southern Pacific Railroad tracks and in the vicinity of the San Carlos Airport.
- . Located with direct access to Bayshore Freeway and major arterials.

Jobs/Housing Issue

An issue of major importance to San Carlos and the southern Peninsula is the imbalance between the number of jobs and the availability of housing. The San Carlos industrial community provides about 10,000 jobs and ranks fifth (in 1980) among the San Mateo County cities as a provider of basic employment. Many of the jobs in San Carlos involve assembly and product manufacturing which are at the lower end of the wage scale. The escalation of housing costs on the Peninsula over the past decade has resulted in prices and rents that are beyond the means of many employees working in the industrial area. The imbalance has adversely affected employers as well as the City in a number of ways. Employees unable to find housing in the immediate area are forced to commute long distances to communities where less expensive housing is available. This is an energy waste and tends to clog highways and streets. Employers have a difficult time recruiting necessary workers. Some interim solutions are available such as company purchase or lease of housing for employees. But the ultimate result is often a corporate decision to limit production in this area and seek other areas of the country for expansion or relocation where housing and labor are less costly. The City ultimately suffers from reduced growth, relocation of business, lost sales tax and reduced purchasing power.

It is recognized that city government is only one factor in the complex situation that has led to the jobs/housing imbalance problem. However,

it is the City's goal to maintain a healthy and dynamic industrial community. Therefore, City policy should be structured to promote the development and improvement of housing that is within the economic reach of those people employed within the community.

Substandard Building Replacement

A number of older, "Quonset Hut" type metal buildings exist in the San Carlos industrial area. These buildings are generally substandard from a building and fire code perspective. In addition, they do not meet architectural standards of nearby buildings. While some isolated efforts have been made to upgrade these buildings to meet current public safety codes, many remain deficient. It is the City's desire to have these buildings replaced with standard structures at the earliest practical time. This is to be accomplished by requiring refurbishing in conformance with current building and fire codes or removal of the structures when:

1. When an occupancy (as defined in the Uniform Building Code) change is proposed for more than 50 percent of the gross floor area of the building.
2. The building is damaged by fire or other disaster to an extent of more than 50 percent of its appraised value.
3. An amortization period of not more than 15 years has been negotiated between the City and the building owner and established by written agreement.

Industrial Land Use Policies

1. The City shall encourage the diversification of industrial uses within its planned industrial areas. Uses to be encouraged are related to the electronics and other high technology business, textile manufacture, research and development and light manufacture assembly.
2. The industrial park design approach including well planned sites, pleasing architecture and landscaping shall be utilized in new developments in the industrial area. The architectural and site plan review process established by the City shall be used to implement this policy.

3. The City shall promote the development and improvement of housing that is within the economic means of those people employed within the industrial community.
4. Adequate off-street parking and loading facilities shall be provided for all industrial development.
5. All utilities installed in conjunction with new construction shall be placed underground, except where due to size or load capacities, such undergrounding would not be feasible.
6. The City shall encourage and support the annexation of those lands in the Harbor Industrial Area within its Sphere of Influence. Prior to annexation facilities and services meeting City standards shall be in place.
7. The City shall work toward amortization and removal of existing, older metal buildings in the industrial area. Such buildings shall be refurbished in conformance with current building and fire codes or removed when one of the following actions occurs:
 - a. When an occupancy (as defined in the Uniform Building Code) change is proposed for more than 50 percent of the gross floor area of the building.
 - b. The building is damaged by fire or other disaster to an extent of more than 50 percent of its appraised value.
 - c. An amortization period of not more than 15 years has been negotiated between the City and the building owner and established by written agreement.
8. A minimum of 10 percent of each new industrial site shall be landscaped with live plant materials. The City shall promote upgrading of the entire industrial area by supporting more intensive landscaping and adequate landscape maintenance. Should larger, taller buildings be proposed in the industrial area, then landscaping requirements shall be proportionately increased up to 20 percent of the site area to a maximum of five acres.

OPEN SPACE LAND USE

General Description

Open space refers to both used and unused land. As a general term, open space refers to specific land use designations including developed and undeveloped park lands, visually significant open lands, water areas and wildlife habitat. As a specific designation, the term refers to undeveloped land which is intended to be retained in an undeveloped state in the future.

Four open space land use categories are described in this section:

1. Open space for outdoor recreation.
2. Open space for preservation of natural resources.
3. Open space for managed production of resources.
4. Open space for public health safety.

These are distinguished from one another by their purpose and use.

In most instances, the most appropriate method for assuring that land remains in permanent open space is through public acquisition. Some methods of accomplishing this are through purchase, acquisition of open space easements, gift, and dedication as part of development.

Open Space for Outdoor Recreation

San Carlos provides a variety of outdoor recreation facilities for use by its citizens in the form of neighborhood and community parks and school grounds. The provision of recreation facilities in San Carlos has been planned around the concept of joint use of school and City facilities. The City has traditionally used elementary, intermediate and high school facilities for community recreation programs. This use has been formalized by agreements with the School District. Land use in the City has consistently relied upon the availability of school sites and facilities for joint recreation as a means of adequately providing recreation space for the citizens without compounding expense to the taxpayers.

The City's recreation planning has been based on the provision of

four acres of active recreation land per 1,000 population for the citizens of San Carlos. Of this total, 1-1/2 acres per 1,000 population is to be available through use of facilities provided by the local school districts. Two and one-half acres per 1,000 population is to be provided by the City. The City's portion of this formula is to be partially funded by dedication of land or collection of in-lieu fees from subdivision and development of property.

TABLE D: PARK FACILITIES

PARK FACILITY	CATEGORY	AREA
Alameda	Neighborhood	0.2 Ac.
Cedar Street	"	0.9
City Hall	"	1.0
Crestview	"	7.0
Heather	"	2.1
Hillcrest Circle	"	0.5
Laureola	"	1.8
Magnolia	"	0.2
North-Crestview	"	8.0
San Carlos Avenue	"	0.2
Vista Point	"	0.5
Arguello	Community	16.8
Burton	"	<u>10.2</u>
		49.4

TABLE E: SCHOOL RECREATION FACILITIES

SCHOOL FACILITY	CATEGORY	RECREATION AREA
San Carlos	High School	13.5 Ac.
Central	Junior High	4.0
Tierra Linda	Junior High	8.1
Arundel	Elementary	1.5
Brittan Acres	"	3.8
Heather	"	3.4
Laureola	"	0.8
White Oaks	"	<u>1.5</u>
		36.6

Open Space for Preservation of Natural Resources

This open space use designation has been applied to significant hillside areas such as the open space in Brittan Heights Project, Big Canyon Park, Leonella Park and the Hassler Health Home. The topography, wildlife habitat and vegetative cover are major natural resources to be preserved.

Much of the area of the 300 acre Hassler Health Home is natural woodland slopes. The former care facility has been designated as a potential regional park of major benefit to San Carlos and Redwood City. Both the San Mateo County General Plan and the San Carlos General Plan designate the area for open space and public acquisition.

The San Francisco Bayfront lands along Steinberger Slough provide the City with a limited water orientation. The fish and wildlife habitat of the saltwater system along the eastern portion of the City is a natural resource to be preserved.

Open Space for Managed Production of Resources

Open space areas for managed production of resources is extremely limited in the urbanized land use pattern of San Carlos. However, areas vital to fish and wildlife production are located along the shoreline of San Francisco Bay. Although severely disturbed in the past, this habitat area should be protected from direct encroachment by development.

Open Space for Public Health and Safety

Pulgas, Brittan and Cordilleras Creeks traverse San Carlos and function as major drainage channels carrying storm water runoff from the upper reaches of the drainage basins to San Francisco Bay. During times of peak runoff, portions of the lands adjacent to the creeks flood. Areas subject to flooding during the 100 year storm are shown on the exhibit entitled "Flood Hazard-100 Year Flood Boundary." Development that is susceptible to damage from flooding should either be precluded from location in these flood plains or designed to avoid flood damage. In general, the creeks and their flood plains should be retained as natural, open space areas.

Development of steep hillsides in unsubdivided areas should be avoided because of slope stability and erosion hazards plus increased earth moving requirements.

The right-of-way for the Hetch Hetchy aqueducts extends from the Hassler property easterly along the northerly side of Edgewood Road. This Hetch Hetchy aqueduct right-of-way up to the crossing of Cordilleras Creek is designated as open space.

San Carlos Airport is an open space use vital to the economic well being of the City. The airport and its surrounding uses function both as a transportation facility and an open space area of subregional importance. Clear zones (areas where development is limited or restricted) surrounds the airport and are necessary for flight safety purposes. The San Carlos Airport should be preserved and enhanced as a significant open space use in the community.

Earthquake fault zones and areas underlain by Bay mud, present pronounced seismic hazards and thus should be avoided as locations for critical public buildings or for facilities where damage through an earthquake could result in considerable loss of life or property damage. In addition, all structures should be set back a distance recommended by an engineering geologist from a fault trace.

Open Space Land Use Policies

1. The City shall continue its program of joint use of school recreation facilities as a means of providing adequate recreation space for San Carlos citizens.
2. The City shall strive to retain school recreation facilities for neighborhood use should the School District decide closure is necessary.
3. A contribution of land and/or fees in lieu of dedication for neighborhood park purposes shall be required of all new residential subdivisions in San Carlos. The total contribution (which may include a combination of dedicated land, fees, or recreation facilities) shall be equivalent to the provision of two and one-half acres of land for each 1,000 persons projected to live in the proposed development.
4. Pulgas, Brittan and Cordilleras Creek channels and their 100 year flood plains shall be retained wherever possible as natural or landscaped open space areas to allow their continued primary function as storm drainage facilities.
5. Development that is susceptible to damage from flooding shall either be precluded from location in 100 year storm flood

plains or be designed to avoid flood damage.

6. Clear zones surrounding San Carlos Airport shall be maintained in accordance with the standards established by the San Mateo County Airport Land Use Committee.
7. The City shall continue to support the preservation and enhancement of the San Carlos Airport as a significant transportation and open space use in the community.
8. The City shall not annex the unincorporated Hassler Health Home property site. The City shall, however, provide input to the Mid-Peninsula Regional Open Space District concerning planning and management of the property for public open space use and passive recreational use. The recreational use shall be compatible with the primary open space use.

PUBLIC AND QUASI-PUBLIC LAND USE

General Description

This land use category typically includes the types of activities and facilities which are generally recognized to be more conveniently provided by public or quasi-public agencies than by individuals. There are basic utilities such as water, sewer and power, basic facilities such as local government and schools, and basic services such as police and fire protection.

Public Facilities

City Administration. San Carlos' government administrative offices are housed in the Civic Center facility on Elm Street south of San Carlos Avenue. Central administrative functions including City administration, police, fire, public works, building inspection and planning are located in the City Hall. That facility also contains chambers for City Council and various commission meetings. The Park and Recreation Department maintain offices at Burton Park. The existing City Hall was designed with adequate space to accommodate the governmental functions of the City upon complete build-out.

Senior Citizen Center. Over the past decade (1970-1980) the age characteristics of the City's population has changed significantly. The median age has increased from 34.8 to 37.5 and the proportion of the population in the 65 and over age group has grown from 9.3 percent to 14 percent. Partially in recognition of this change and also a desire on the part of the community to provide recreation and activity facilities for seniors, the City in cooperation with San Mateo County and the Federal Housing and Community Development Block Grant Program, constructed a center for the senior citizens of San Carlos. The building, located at the corner of San Carlos Avenue and Chestnut Avenue contains meeting rooms, kitchen and dining facilities, recreation rooms and a library. The center contains 15,500 square feet and can accommodate up to 600 people. The center is part of the Civic Center complex consisting of City Hall, the San Carlos Library and City Hall Park.

Corporation Yard. The City's Corporation Yard, where maintenance equipment is stored and maintained, is located on Industrial Road at east San Carlos Avenue. This one \pm acre site has limited area, older inadequate facilities and very little storage space. The City has purchased a new three acre Corporation Yard

site on Bransten Road between Old County Road and Industrial Road. The new site provides sufficient space for expansion and an opportunity to replace older, inadequate buildings and equipment. Site improvements are scheduled for fiscal year 1983-84. When the Corporation Yard functions have been moved to Bransten Road the existing site will probably be retained by the City and leased on a long-term to an industrial or commercial tenant.

Public Schools. Public schools provided for the City of San Carlos are under the jurisdiction of the San Carlos Elementary School District, the Sequoia Union High School District and the San Mateo Community College District. All of these districts serve an area which extends beyond the San Carlos city limits. The boundaries of the San Carlos Elementary School District are very similar to the boundaries of the City.

The City is now served by four elementary schools and one junior high school. During the 1970's the public elementary, intermediate and high schools have experienced substantial decline in enrollment. This is generally due to reduced family size and a slight increase in the average age of the population within the district service areas. Laureola Elementary School, Tierra Linda School and San Carlos High School were closed due to declining enrollments.

TABLE F: SAN CARLOS SCHOOLS

SCHOOLS	GRADE LEVEL	SITE AREA
San Carlos High	Closed	41.0 Acres
Central	7-8	9.2
Tierra Linda	Closed	20.4
Arundel	K-6	11.0
Brittan Acres	K-6	7.0
Heather	K-6	14.0
Laureola	Closed	6.0
White Oaks	K-6	3.3

Airport. The San Carlos Airport is a general aviation facility owned and operated by the County of San Mateo. The airport property and its adjacent fixed base operators are located on approximately 110 acres of land southeast of the Bayshore Freeway/Holly Street Interchange.

The airport has a single northwest-southeast runway, 2,600 feet in length. The Federal Aviation Administration operates a tower for air traffic control. During 1974 the facility accommodated 258,000 operations. A level very near its operational capacity. Facilities at the airport include tie downs, hangars, and full maintenance service. Fixed base operators provide rentals, instruction, air taxi/charter and air ambulance service.

The San Carlos Airport is of vital economic importance to San Carlos and the surrounding cities. Plans for expansion and runway lengthening to 3,400 feet have been prepared and implementation is pending acquisition of additional property to the south.

Regulation of land use and structural heights around the airport is the responsibility of the San Mateo County Airport Land Use Commission. The Airport Land Use Plan specifies clear zones, height limits and land use restrictions to protect the airport as an important land use and for flight and public safety purposes.

SamTrans Maintenance Facility. The San Mateo County Transit District (SamTrans) has established its South County Maintenance Facility on 10 acres of land east of Bayshore Freeway and south of Redwood Shores Parkway. This is a light maintenance operation (washing, fueling, tire repair, oil change and lubrication) for buses. All heavy maintenance is planned to occur at the District's north base facility in South San Francisco. The site is planned to accommodate approximately 250 buses.

Public Utilities

Sewage Treatment. San Carlos' sewage collection system primarily consists of gravity flow collectors and trunks. A collection system carries sewage from the higher elevations of the western portion of the San Carlos Pump Station located at this end of Monte Vista Road. From there sewage is transported by a force main to the South Bayside System Authority (SBSA) Sewage Treatment Facility located in the eastern portion of Redwood Peninsula in Redwood City.

The SBSA Treatment plant was opened in October 1981 and replaced the older facility located at the southeast corner of the Bayshore Freeway/Holly Street Interchange. The authority provides service to four major sanitary jurisdictions: Belmont, San Carlos, Redwood City and the West Bay Sanitary District. The plant's dry-weather

design capacity is 24 million gallons per day. The peak wet-weather capacity is designed for 68 million gallons per day. The current combined dry-weather flow generated by the four contributing jurisdictions is 19 million gallons per day. San Carlos is allocated 3.7 million gallons per day as its proportion of the treatment plant dry-weather design capacity.

TABLE G: SEWAGE SYSTEM CAPACITY ALLOCATION - SAN CARLOS

AGENCY	DESIGN FLOW IN MGD	BOD IN LBS/DAY	SUSPENDED SOLIDS IN LBS/DAY
City of San Carlos	3.268	6008	10044
Subcontractors:			
Harbor Industrial	.330	409	459
Scenic Heights	.009*	21	30
Devonshire	.056*	122	164
Emerald Lake Heights	<u>.037*</u>	<u>83</u>	<u>117</u>
TOTAL	3.7	6643	10814

* These allocations are based on population or dwelling units as computed by SBSA. There are no "contractual" capacity allocations sub-assigned to any entities as of 12/16/81 except Harbor Industrial.

The estimated level of wastewater processing for the San Carlos area in November 1981 was slightly over 3 million gallons per day. Estimated usage for the City and each of the sub-contracting agencies is documented in the following Table H. Table I shows the current remaining allocation of sewage treatment capacity to the City and its sub-contractors. The November data may include some wet-weather flow. Allcoated capacities are for dry-weather months (normally June, July and August), consequently, this inclusion of some wet-weather data may give the impression of higher than actual usage.

TABLE H: NOVEMBER 1981, CURRENT USAGE AND DEMAND LEVEL ESTIMATES

AGENCY	FLOW (MGD)	BOD (LBS/DAY)	SUSPENDED SOLIDS (LBS/DAY)
San Carlos	2.647	5244	7124
Harbor Industrial	.287	319	369
Scenic Heights	.009	21	30
Devonshire	.046	101	143
Emerald Lake Heights	<u>.036</u>	<u>81</u>	<u>115</u>
TOTAL	3.025	5766	7781

The figures which appear in Table H and I represent the current estimated level of wastewater processing for the City of San Carlos and for the subcontracting agencies to San Carlos. In Table H, current system usage is listed for each jurisdiction according to volume requirements (Flow), Biochemical Oxygen Demand (BOD) and Suspended Solids processing requirements. Table I shows estimates of the surplus capacity currently available to each jurisdiction to accommodate planned growth.

TABLE I: SURPLUS CAPACITY

AGENCY	FLOW (MGD)	BOD (LBS/DAY)	SUSPENDED SOLIDS (LBS/DAY)
San Carlos	.621	764	2920
Harbor Industrial	.043	90	90
Scenic Heights	0	0	0
Devonshire	.01	21	21
Emerald Lake Heights	<u>.001</u>	<u>2</u>	<u>2</u>
SUBTOTAL SUBCONTRACTORS	.054	113	113
TOTALS	.675	877	3033

Water Supply. Water is supplied to the City of San Carlos by the California Water Service Company. That company purchases water from the San Francisco Water Department whose sources come from the Hetch Hetchy system, the Toulumne River Basin and local sources in Alameda and San Mateo Counties. During normal water use times San Carlos consumes about 5,300 acre-feet of water per year. During the 1977-78 drought period the estimated water use was about 3,500 acre-feet per year. Subsequent to the drought, the consumption rates have increased to levels similar to pre-1977 conditions. The supply and storage capacity of the water purveyor in San Carlos is adequate to meet the present needs and foreseeable growth as projected in the General Plan. The City of Redwood City provides water service to the Palomar Park and Hassler Health Home areas which are within the City of San Carlos' Sphere of Influence.

Drainage. Pulgas, Brittan and Cordilleras Creeks are the main drainage ways through San Carlos. The upper reaches of these creeks are generally unimproved natural channels. Considerable portions of the lower reaches have been improved to varying design capacities. The desirable standard for design of major drainage facilities in San Carlos is the 100-year storm. Other drainage facilities should be designed to carry the 25-year storm flow.

The California Government Code (Article 65302a) requirement for identification of areas subject to flooding is met by reference to the accompanying map entitled "Flood Hazard-100 Year Flood Boundary) mapped by the U.S. Department of Housing and Urban Development. This map should be reviewed annually and amended when necessary to reflect current or changed conditions.

Solid Waste Transfer Station. Solid waste disposal in San Carlos and southern San Mateo County is the responsibility of Browning-Ferris Industries (BFI), under a franchise granted by the several cities served by this private company. BFI collects and hauls the waste to a disposal site at Ox Mountain north of Highway 92 and Skyline Boulevard. In order to facilitate the haul operation, BFI has constructed a solid waste transfer station on Shoreway Road north of the Holly Street/Bayshore Freeway Interchange. The transfer station consists of a large building where collection vehicles deposit garbage and transfer it to larger hauling trucks for transport to Ox Mountain. Facilities for public dumping are also included in the building. It is expected that the transfer station will

process about 1,200 tons of waste per day or 312,000 tons per year.

Gas, Electric, Telephone and Cablevision. Gas and electric service is provided to the City of San Carlos by the Pacific Gas and Electric Company. Telephone service is provided by Pacific Telephone Company. Cable television service is provided by Peninsula Cable TV.

Public Services

Safety Services. San Carlos has its own Police Department which is responsible for all areas within the city limits. Automatic aid agreements provide for certain emergency response between surrounding San Mateo County cities and the unincorporated area within the City's sphere of influence. The San Carlos Police Department has its headquarters at the Civic Center Building located on Elm Street south of San Carlos Avenue. The primary responsibility for police service in the unincorporated areas is the San Mateo County Sheriff's Office with headquarters in Redwood City.

San Carlos' fire protection is provided by the South County Fire Authority, a joint powers authority responsible for fire protection in the Cities of San Carlos and Belmont. South County Fire is a joint powers authority operating three firefighter staffed stations in San Carlos and two in Belmont. The stations are located as follows:

Station #1 Laurel Street south of Holly Street

Station #4 Alameda de las Pulgas south of Howard Street

Station #5 Brittan Avenue at Industrial Road.

The City of San Carlos owns a potential fire station site at the intersection of Brittan Avenue and Crestview Drive in the Western Hills.

Generally, the acceptable response time to residential fires is in the range of 3-5 minutes. Automatic aid and mutual aid agreements with adjacent cities and firefighting agencies are currently in existence. A Paramedic Unit is based at Station #5.

Libraries. The San Carlos branch of the San Mateo County Library System is located at the Civic Center on Chestnut Street north of Cherry Avenue. No additional library facilities are planned for location within the City.

Public and Quasi-Public Land Use Policies

1. City administrative functions shall be primarily located in the Elm Street Civic Center.
2. The existing Corporation Yard shall be relocated to the City owned site on Bransten Road and the existing site shall be used for future industrial or commercial purposes.
3. The City of San Carlos supports the concept of maintaining neighborhood schools wherever possible. Any surplus school sites shall be used for purposes which are compatible with the surrounding neighborhood and consistent with the General Plan Land Use designation.
4. The City shall continue to support the expansion and development of the San Carlos Airport in accordance with the adopted San Mateo County Airport's plan.
5. The City shall require the use of water conserving plumbing fixtures in all new development permitted in San Carlos.
6. The City shall encourage the use of drought tolerant vegetation in future landscaping to reduce the need for irrigation.
7. The City shall grant sewer connection permits in the unimproved portions of the Devonshire County Sanitation District in accordance with the following criteria:
 - a. Properties identified as separate whole lots or as parcels created by San Mateo County subdivision procedures prior to 6 November 1979 and in separate ownership on 6 November 1979 from all other contiguous properties within the boundaries of the same originally assessed parcel will be granted a sewer connection.
 - b. A separate legally described improved lot or parcel approved under San Mateo County subdivision procedures

and in common ownership on 6 November 1979 with contiguous improved parcels within the same original assessed parcel will be granted one additional sewer connection.

- c. Multiple unimproved lots or parcels in common ownership on 6 November 1979 with contiguous improved parcels within the same original assessed parcel will be granted the amount of sewer connections individually determined by the City's Director of Planning according to the number of dwelling units that would be acceptable under City Subdivision and Zoning Regulations. Said connections will not be permitted until the lines dividing the multiple lots or parcels have been appropriately adjusted to conform to the approved number of connections.
8. The design standard for major drainage facilities shall be the 100 year storm. The design standard for drainage facilities other than major shall be the 25 year storm.



LAND USE DIAG

0 800 2000
SCALE IN FEET

RESIDENTIAL
 SINGLE FAMILY, LOW DENSITY
 SINGLE FAMILY
 MULTIPLE FAMILY, LOW DENSITY
 MULTIPLE FAMILY, HIGH DENSITY

COMMERCIAL
 RETAIL CORE
 SERVICE AND CONVENIENCE
 HIGHWAY SERVICE



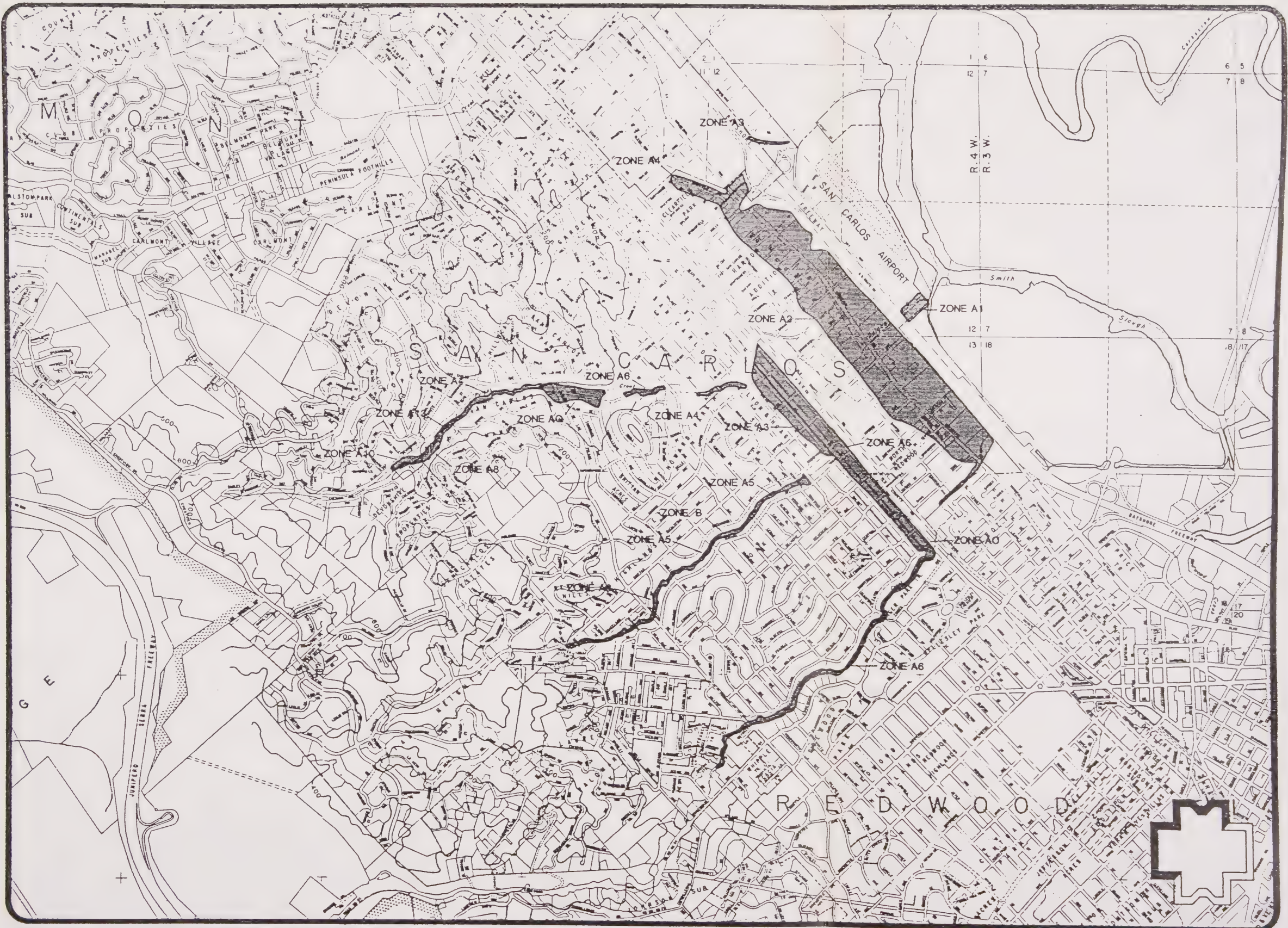
LAND USE DIAGRAM

- COMMERCIAL RETAIL CORE**
- SERVICE AND CONVENIENCE**
- HIGHWAY SERVICE**

- INDUSTRIAL PLANNED**

- OTHER OPEN SPACE**
- PUBLIC**
- SCHOOL**
- AIRPORT**





FLOOD HAZARD-100 YR. FLOOD BOUNDARY

SOURCE: City of San Carlos, San Mateo Co., Flood Hazard Boundary Map, Revised August 1979, Department of Planning and Urban Development, Scale 1"=500'

**CIRCULATION AND SCENIC
HIGHWAYS ELEMENT**

C I R C U L A T I O N A N D S C E N I C H I G H W A Y S E L E M E N T

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C I R C U L A T I O N A N D S C E N I C H I G H W A Y S

E L E M E N T

INTRODUCTION

Purpose

The Circulation Element describes facilities for the efficient transportation of goods and the safe and effective movement of people throughout the City. It includes a plan of the streets and highways plus facilities for pedestrian, bicycle, rail and air transportation. The location and appropriate size of roads for private automobile and public bus are important to San Carlos residents. Adequate facilities for other transportation modes help reduce dependence on the automobile as a method of promoting energy conservation.

The Scenic Highways Element deals with identification and protection of the scenic qualities of major road corridors. The San Carlos Scenic Highways Element describes a system of selected roads with adjacent scenic corridors and a set of implementation policies establishing a program for protection and enhancement of scenic qualities within these corridors. The plan involves State, County and local scenic highways and roads, and as such represents the local component of the regional scenic highway system.

Relation to Other Elements

The Circulation Element is primarily related to the Land Use and Housing Elements. Circulation routes must consider the accommodation of public utilities, the intensity and pattern of land use and the provision of local connections along designated points for access and safety. Transportation routes must be sensitive to employment locations and concentrations of residential groups to be served.

The Scenic Highways Element is primarily related to the Circulation and Land Use Elements and secondarily related to the Open Space and Conservation Elements.

GOALS AND OBJECTIVES

GOAL: To develop a circulation system that is responsive to the needs of various land uses planned within the City of San Carlos.

OBJECTIVES:

- . Widths of streets and highways should reflect existing and projected traffic volumes based on the Land Use Plan.
- . The major road system should be designed to carry traffic around rather than through residential areas.
- . Adequate access should be provided to the commercial and industrial areas of the City.
- . Access to public transportation facilities should be convenient and designed to encourage use of public transit.

GOAL: To provide adequate facilities for the various transportation modes in addition to the automobile.

OBJECTIVES:

- . Continue to recognize, protect and support the San Carlos Airport as a regionally important general aviation facility. Plan for the expansion of the airport in accordance with the adopted Airport Land Use Committee Plan. Provide adequate surface transportation access to that facility.
- . Support the California Department of Transportation efforts to upgrade and expand the Peninsula rail service. Work with that agency in implementing its plans for local facility improvements.
- . Continue to support operation of adequate public bus service throughout San Carlos by the San Mateo County Transit District.
- . Provide for adequate pedestrian and bicycle facilities as viable transportation alternatives in San Carlos.

GOAL: To develop a system of scenic highways and roads that reflects the aesthetic and visual qualities of San Carlos and the surrounding region.

OBJECTIVES:

- . The primary responsibility for development and maintenance of the scenic highway system in the San Carlos vicinity rests with the State of California and San Mateo County. Specifically designated State and County scenic highways provide the framework

for the local scenic route system.

- . The local scenic road system should take advantage of the adjacent urban land uses and reflect the aesthetic qualities of the existing and developing San Carlos landscape.

CIRCULATION SYSTEM

The streets and highways in San Carlos may be divided into four classifications; freeway/state highway, arterial street, collector street and minor street. Freeways and state highways are the primary responsibility of the California Department of Transportation. As such, the geometrics and cross section design of these facilities are largely determined by that agency after public hearings have been held in the affected areas.

The street system within San Carlos is structured around arterial streets which carry the larger volume of traffic around, rather than through, residential districts, commercial districts and industrial districts. The arterials are fed by collector streets which act to collect traffic from minor streets within each of the districts. Usable road width, sight distance and travel speed generally increase as one moves from minor streets to more important travel routes. A local system of curved streets with offset intersections is considered preferable to the standard grid system. Curved residential streets help prevent through traffic and add character to the neighborhood.

Overall, the amount of total traffic is expected to increase in direct proportion with increased population. This incremental increase in volume may require widening in some places and the installation of traffic control devices at intersections. Street widths should be designed to reflect the anticipated traffic volumes. The following table shows the normal range of traffic capacity on through streets in terms of average daily traffic:

<u>Type</u>	<u>Volume (ADT)</u>	<u>Lanes</u>
Highway	20,000 per lane	4-10
Arterial	10,000-30,000	2- 4
Major Collector	5,000-10,000	2
Collector	5,000	

Freeways and State Highways

San Carlos is situated between two major freeways; U.S. 101 and Interstate 280. U.S. 101 and Interstate 280 are major north-south links between the Cities of San Francisco and San Jose. U.S. 101 is a significant source of noise affecting the community. Interstate 280 is a state recognized scenic route.

El Camino Real (State Route 82) traverses the City parallel to the Southern Pacific railroad tracks in a northwest-southeast direction. The highway functions as an inter-city traffic facility with adjacent highway commercial uses. Within San Carlos, El Camino Real should ultimately have six lanes for moving traffic, and a median divider or left turn stacking lanes. Left turn lanes should be spaced to guide traffic to arterial and collector streets as well as the Central District. Site and building design, landscaping and sign control are extremely important considerations on adjacent properties. Land uses should continue to be highway commercial oriented. Sufficient off-street parking must be provided with access limited as much as possible.

A new southbound off and on ramp is proposed as a connection to Brittan Avenue with U.S. 101. This added partial interchange would help provide access to San Carlos' industrial area and relieve congestion at the Holly Street/U.S. 101 interchange by allowing traffic to enter the industrial area at Brittan Avenue.

A full cloverleaf is planned at the Holly Street/U.S. 101 Interchange, including four lanes on the Holly Street.

Arterial Streets

Arterial streets comprise the major network of streets within the community. Their function is to link residential, commercial and industrial districts with the freeways and highway system, to provide convenient access to other transportation facilities, and to act as the major emergency service and evacuation routes. Arterials are typically two to four lane streets having some controls over parking and access points. The arterials also perform the important function of acting as alternative east-west and north-south routes should the freeway system be blocked to emergency vehicles.

Frequently there are serious conflicts between the land-service and traffic-service functions of arterial streets. If the land adjacent to the arterial is intensively used, the conflict is hazardous and the accident potential is high. The traffic function of arterials, that of moving relatively large volumes of vehicles, is most important. Land access is its secondary function. For this reason driveways and intersections should be kept to a minimum.

Arterial streets should be designed to carry two to four moving lanes of traffic. Parking lanes, which should be provided, may be converted to a traveled way if traffic warrants.

ARTERIALS	NUMBER OF LANES
Alameda de las Pulgas	2-4
Brittan Avenue	2-4
Crestview Drive	2-4
Elm Street (Holly to San Carlos)	2
Holly Street	2-4
Howard Avenue (Laurel Street to Industrial Road)	2-4
Industrial Road	4
Laurel Street	2
Old County Road	2
San Carlos Avenue	2-4
Shoreway road	2
Skyway Road	2

Collector Streets

Collector streets are of less importance than arterials but should still be designed to carry through traffic. These facilities, as their name implies, have the prime purpose of collecting traffic. Their function is to transfer traffic from local traffic generators (residential neighborhoods, schools and employment centers) and minor streets to arterials. The design of major collector streets should reflect this emphasis on carrying traffic. They should be wide two-lane streets and protected from cross traffic. Minor streets should avoid crossing a collector; T-intersections are preferred and good sight distance at intersections is necessary. Collector streets should not form a continuous system, otherwise there will be a tendency to use them as arterials.

COLLECTORS	NUMBER OF LANES
Arroyo Avenue	2
Beverly Drive-Windsor Drive-Torino Drive	2
Cedar Street	2
Club Drive	2
Cordilleras Avenue	2
Devonshire Boulevard	2
Eaton Avenue	2
Elm Street	2
Hillcrest Road-Shelford Avenue-Wellington Drive	2
Howard Avenue	2
Melendy Drive	2
St. Francis Way	2

Local Streets

Local streets are used to provide access to abutting property, locations for easements, open space for light and air, and a firebreak between buildings. Carrying traffic is a secondary function of local streets and they should be designed to discourage through traffic. Local streets are an important element in community design. These facilities provide a permanent framework for building and landscaping. Local streets are typically two lane facilities with direct access to abutting properties. On-street parking should be provided wherever topographically possible.

Hillside Streets

In hillside areas where average cross slopes exceed 10 percent, street widths may be narrowed to reduce grading and associated environmental impacts. In less steep areas with cross slopes of 10 to 20 percent, the roadway width may be as narrow as 32 feet. In steeper areas in excess of 20 percent a roadway width of 28 feet may be appropriate. However, fire safety considerations should be incorporated into any road design using these reduced widths. In addition, adequate provision should be made for on- and off-street parking and pedestrians. In general, right-of-way widths do not need to be reduced in these hillside areas.

Rural Roads

In certain areas of San Carlos a more rural or rustic environment exists. In these areas it is determined that road standards should be used which are consistent with the land use pattern and normally lower intensity of development. Rural road standards may be proposed in these areas which generally consist of reduced roadway widths, no curbs and gutters and asphaltic concrete sidewalks on one side of the road. Design of such rural roads should reflect the character of the neighborhood, desirability of preserving trees and advantages of reduced grading. Adequate drainage must be provided in the design. As in the case of hillside roads, fire safety considerations must also be accounted for in the design.

Street Standards

The general standards for street right-of-way and improvements are listed below. Local conditions may necessitate modification of these standards where topography, building location or other conditions warrant. Detailed standards for street improvements are set forth in San Carlos' Subdivision Ordinance and Standard Specifications.

<u>Street Category</u>	<u>Pavement Width</u>	<u>Right-of-Way Width</u>
Freeway and State Highway	Established by State	
Arterial	56'-64'	80-86'
Collector	40'	60'
Local	36'-40'	50'
Hillside	28'-32'	50'
Rural	24'	50'

Traffic Volume and Intersection Service Levels

Traffic volumes were counted at key locations and intersections throughout San Carlos during 1982. Levels of service were calculated for the various intersections based on the volume/capacity ratios. The level of service of an intersection can vary from "A" free flow thorough "F" forced flow (jammed) as defined in the following table. The intersection counts and volume/capacity ratios were based on peak hour traffic (typically between 4:45 and 5:45 P.M. in San Carlos). Traffic volumes are presented in forms of Average Daily Traffic (ADT) (see map entitled Traffic).

LEVEL OF SERVICE (HIGHWAY CAPACITY MANUAL)

<u>Level of Service</u>	<u>Volume to Capacity Ratio (v/c)</u>
A Free Flow	Less than or equal to 0.75
B Stable Flow (slight delay)	0.76 - 0.90
C Stable Flow (acceptable delay)	0.91 - 1.00
D Approaching unstable flow (tolerable delay)	1.01 - 1.15
E Unstable Flow (congestion; intolerable delay)	1.16 - 1.25
F Forced Flow (jammed)	Greater than 1.25

CIRCULATION

Holly Street-Brittan Avenue/U.S. 101 Access

San Carlos currently has only a single access to U.S. 101 at Holly Street within the city limits. Harbor Boulevard in Belmont and Whipple Avenue in Redwood City also provide a means of access to the community from Bayshore Freeway. The existing two lane overcrossing and three-quarter cloverleaf interchange is planned for expansion to a full cloverleaf with a 6 lane overcrossing in the near future. Traffic volumes utilizing the interchange in 1983 were approximately 7,000 vehicles per hour during the PM peak hour. The interchange is currently operating at a level of service D/E. It is estimated that new development in the vicinity of the Holly Street interchange will add approximately 8,200 peak hour vehicle trips to the interchange traffic in the future.* Upon completion of these projects the interchange will operate at Level of Service F.

Compared to other sections of US 101, the link between Route 92 and Palo Alto is relatively uncongested. "South of Route 92, Route 101 operates at 62-72% of capacity in the evening peak and traffic flows freely (Service level L).*" However, the traffic generated by new development in Redwood City can be anticipated to have a significant adverse effect on traffic between Foster City and San Carlos during peak periods. While no specific estimates of future service levels on U.S. 101 are available, it is assumed that completion of all planned projects would result in levels of E to F.

Traffic on Holly Street between Industrial Road and El Camino Real averaged almost 18,000 vehicles per day in 1983. That link and the intersections currently function at Level of Service F. Should Holly Street remain the primary access route into San Carlos, future developments would add 9,000 more vehicles to that already deficient roadway. Such an increase would severely impact adjoining land uses, lengthen the times of congestion and have an adverse financial and environmental effect on the community.

* MTC-Final Report-Transportation Impacts of proposed development on the development on the Peninsula along U.S. 101 (projects include: Parkwood 101-Redwood City, Redwood Shores-Redwood City, Browning-Ferris Offices-San Carlos, SamTrans South Operating Base-San Carlos, South Shores-Redwood City).

* IBID

Since San Carlos has little ability to affect the scope, intensity or timing of development in Redwood City, it must assume a reactionary role to the traffic being imposed on the community. Two basic alternatives seem to be available for coping with the future traffic:

1. Widen Holly Street to 4-6 lanes to accommodate future traffic and to construct a grade separation at Old County Road/Southern Pacific Railroad/El Camino Real.
2. Construct a supplemental interchange (S/B off and on ramps) at Brittan Avenue (or some other point south of Holly Street) to accommodate future traffic into San Carlos. Also, construct a grade separation on Brittan Avenue at Old County Road/Southern Pacific/El Camino Real.

The first alternative would cause severe disruption to the existing residential uses along Holly Street and a major grade separation at El Camino Real. Undoubtedly, homes on one or both sides of Holly Street would need to be purchased and removed with concurrent resident relocation. Businesses in the vicinity of Holly and El Camino Real would be disrupted and/or relocated.

The second alternative would be less disruptive; requiring some relocation of mobile homes at the park adjacent to Brittan Avenue and U.S. 101. However, most widening could occur within the existing 66 foot Brittan Avenue right-of-way. While construction of a grade separation at El Camino Real would disrupt some businesses, it would not be nearly as severe as at Holly Street/El Camino Real.

The circulation plan contains proposals for implementation of the second alternative; construction of southbound off and on ramps at Brittan Avenue, widening of Brittan Avenue to El Camino Real, and construction of a grade separation at Brittan at Old County Road/Southern Pacific Railroad/El Camino Real. The solution would help relieve traffic on Holly Street and will be significantly less disruptive than other available alternatives.

Crestview Drive Connection to I-280 Vista Point Interchange

Traffic on streets within San Carlos Western Hills has been increasing with development that has occurred within that area. Several streets are currently functioning at reduced service levels (e.g. Melendy, LOS E-F, Club Drive, LOS E-F). Since these existing streets have little room for widening or other means of increasing capacity, the circulation plan contains a proposal for alleviation of the congestion by construction of an alternative access to I-280. A connection from Crestview

Drive, through a City owned parcel, to the existing I-280 Vista Point Interchange west of the City is proposed. It is anticipated that approximately 3,000 vehicles per day of local Western Hills traffic would utilize this facility for northbound access to and from I-280. Implementation of this proposal would significantly reduce the existing and future traffic loads on Club Drive, Melendy Drive and Brittan Avenue.

Parking

Adequate off-street parking is necessary in order to relieve traffic congestion in San Carlos' commercial, industrial and residential areas. All new developments should provide for adequate off-street parking in an effort to relieve the congested conditions.

Portions of the Central District have an apparent parking congestion problem. As downtown development intensifies or land uses change, this off-street parking problem could be compounded. Some possible solutions might include designation of specific areas for employee parking, expansion of the parking plazas, changed parking time controls or provision of additional parking. The City can help participate in the planning and implementation process, however the owners of businesses and property in the Central District should be the prime participants and be encouraged to develop and implement adequate solutions.

Facilities for the Handicapped

State law requires that extra wide parking spaces be provided for handicapped persons at locations near the entry to public buildings and business developments. Curb ramps at street intersections designed to facilitate wheelchairs should be provided and made conditions of project approval for new developments where feasible. San Carlos implements these requirements through its development review process.

Pedestrian Facilities and Trails

Pedestrian sidewalks should be installed in those areas where new development occurs. Sidewalks might not be appropriate in those areas where their inclusion would be inconsistent with prior development in the surrounding area.

A local trails system is part of San Carlos' circulation system. This trail system is planned and partially existing in the Western Hills area.

Bicycle Facilities

The Bicycle Route Plan for San Carlos is shown on the map entitled "Parks, Open Space and Vacant Land" in the Open Space and Conservation Element. Two regional level bike trails are located outside of the City limits to the west in the San Francisco Watershed property and to the east through Redwood Shores. The two regional systems as well as the main bike trails through San Carlos are consistent with the San Mateo County adopted "Bikeways Plan."

Standards for designation and construction of bike routes in San Carlos are those adopted by the California Department of Transportation. In general, the bike route designations in San Carlos consist of roadway striping to provide separate bike lanes and signing. Wherever possible, bike paths separating bicycles from vehicular traffic are considered desirable.

TRANSPORTATION FACILITIES

Transportation facilities provide for the movement of goods and people generally along fixed routes and on a fixed schedule in contrast to the circulation system of roads for private automobiles and trucks which permits random movement. Three modes of transportation are readily available to San Carlos; rail, road and air.

Rail Facilities

Rail service to San Carlos consists of the Southern Pacific Railroad line from San Jose to San Francisco. The Southern Pacific provides both commuter and freight services through the City. A significant portion of San Carlos residents work in San Francisco or north San Mateo County. Significant energy savings results by those who use the commuter trains rather than driving private automobiles. The City supports the proposal to extend the present San Francisco terminal facilities from Third Street to the Ferry Building as an incentive to increase commuter ridership. Rail spur lines service the San Carlos Industrial area.

Public Bus

The San Mateo Transit District provides inter-county bus service to all of the cities of Bayside San Mateo County. Local service is available to most parts of San Carlos and commuter service is available via express routes along Bayshore Freeway. The Transit District has assumed the commute function of the Greyhound Line within the County.

Air

The San Mateo County Airport at San Carlos is a general aviation facility located in the eastern portion of the City. The airport is primarily oriented to private planes used for business and pleasure. For international flights, San Carlos residents must rely on the San Francisco International Airport and the Oakland Airport. San Francisco International Airport can be reached by San Carlos residents in two ways; 1) by private vehicle and 2) by SamTrans bus.

Rapid Transit

Although no agency presently exists to plan and construct rapid transit facilities in San Mateo County, it is anticipated that such an agency will be formed in the future. Past studies indicate that the most logical form of regional transit will be a rapid fixed rail facility.

Extensive studies into the subject indicate that the rail facility will probably be located adjacent to and westerly of the Southern Pacific railroad tracks. This location was based on regional considerations including the best service to commuters plus physical limitations of other available sites. It is also assumed that the system will be compatible with that of the Bay Area Rapid Transit District.

SCENIC HIGHWAYS

Scenic Roads and Corridors

The Scenic Highways portion of this Element is a plan for the development, establishment and protection of scenic roads of state, regional and local value. Scenic roads are an important resource to San Mateo County and to San Carlos for both aesthetic and recreational values. Pleasure driving is an important form of recreation in the county. It is done both as a purely recreational experience as well as in conjunction with other trip purposes. It is common for persons to select travel routes for visual amenities as well as for consideration of travel time and operating speeds.

Scenic corridors can best be defined as the visual land area outside the road right-of-way and generally described as the "view from the road." It is within this area that development standards are applied to retain and enhance scenic qualities and restrict unsightly use of the land. These standards may include architectural and site review procedures and regulations on buildings setbacks, signs, grading, tree removal and undergrounding of utility lines.

In 1973, the State of California adopted a master plan for scenic highways which defines the system of scenic highways for state growth. In San Mateo County, four routes are included in the master plan. They are the Cabrillo (Coast) Highway (State Route No. 1); Skyline Boulevard (State Route No. 35); Half Moon Bay Road, west of Interstate Route 280 (Route Mp. 92); and, Junipero Serra Freeway (Interstate Route. No. 230). This system of state roads in San Mateo County constitutes the greatest length of scenic highway mileage in all of the nine Bay Area Counties and acknowledgement by the state of the abundance of scenic attributes which exist in San Mateo County. However, inclusion in the State Master Plan does not automatically designate a road an official state scenic highway; it merely indicates that the road qualifies for official designation and so may receive an official designation if a specific scenic corridor is defined for the roadway and a plan and program for protecting scenic resources within the corridor are adopted. If the

scenic corridor and regulatory controls adopted by a jurisdiction are satisfactory to the state, the county roads are then officially designated as state scenic highways.

This Scenic Highways Element specifies roads within the State Master Plan in the vicinity of San Carlos and, also, city and county roads with significant scenic value.

State Scenic Highway

Junipero Serra Freeway (Interstate Route 280). This state freeway extends the entire length of the county from Daly City to Menlo Park (28.5 miles). Designed as the world's most beautiful freeway, this highway traverses the foothills of the Peninsula between San Francisco and San Jose. Sweeping panoramic views of the Bayside and the San Francisco Watershed property are visible from four vista points adjacent to the roadway. The highway was designed to blend with its natural surroundings, and two of its bridges have won national awards for excellence of design. This road is included in the State Master Plan for scenic highways.

County Scenic Highways

Edgewood Road. Edgewood Road is located immediately adjacent to the San Carlos planning area connecting Alameda de las Pulgas with Cañada Road and Interstate 280. The rural nature of the area through which this road passes, its scenic views and surrounding land use warrant inclusion as a scenic road. Edgewood Road passes the Hetch Hetchy Aqueduct right-of-way, the planned Hassler Regional Open Space and the Edgewood County Park site.

Cañada Road. Cañada Road is located westerly of the San Carlos planning area within the limits of the San Francisco Watershed lands. These lands are dedicated to permanent open space. The road provides a pleasant drive between Edgewood Road and State Route 92 to the north. It is also used extensively by bicyclists.

City Scenic Roads

Alameda de las Pulgas - San Carlos Avenue. Alameda de las Pulgas and that portion of San Carlos Avenue westerly of Alameda are urban city streets lined with residential uses. Some locations afford urban landscape views of hills or the San Francisco Bay. Within San Carlos, special landscape treatment has been implemented at points along the route to enhance the corridor. Continued maintenance of the residential

land uses adjacent to this route is anticipated.

Brittan Avenue. Brittan Avenue extends from Alameda de las Pulgas to Crestview Drive through a canyon representative of the natural interior coast range woodland. Single family homes front on Brittan Avenue with a backdrop of hillside open space retained in permanent City ownership. A portion of the northern side of the canyon is permanently protected by the existence of Big Canyon Park.

Club Drive. Club Drive extends from San Carlos Avenue to Crestview Drive. The route climbs a major ridge where significant panoramic views are available. Club Drive is generally lined with single family residential uses with open space uses existing in the canyons below. A town home development is planned near its intersection with Crestview Drive.

Crestview Drive. Crestview Drive extends along the major ridge in the western portion of San Carlos. The route extends from the Belmont city limits southerly to connect with Edgewood Road at the lower elevations near the headwaters of Cordilleras Creek. The route offers views of the San Francisco Bay and the San Francisco Watershed lands.

El Camino Real. El Camino Real is a State Highway paralleling the Southern Pacific Railroad extending from Redwood City on the south to Belmont on the north. Planned improvements to the facility include landscaped medians with left turn pockets, widening in the vicinity of the Southern Pacific Station and landscaping along the east and west sides.

CIRCULATION, TRANSPORTATION AND SCENIC HIGHWAYS POLICIES

The following policies are set forth to help guide decision making with regard to circulation, transportation and scenic highways.

Circulation Policies

1. A new freeway southbound on- and off-ramp shall be constructed on U.S. 101 at Brittan Avenue, intended to provide more convenient access to the central portion of the San Carlos industrial area.
2. Widen Brittan Avenue from U.S. 101 to El Camino Real to four lanes within the existing right-of-way. Construct a grade separation on Brittan Avenue at Old County Road/Southern Pacific Railroad/El Camino Real to replace the existing Howard Street at grade crossing of the Southern Pacific Railroad.
3. Streets within the San Carlos multiple-family area shall be of sufficient width to accommodate future traffic volumes as specified in the plan for that area.
4. Street and right-of-way widths shall be designed and constructed in accordance with the street standards established in this plan, the City Subdivision Ordinance and Standard Specifications.
5. Parking and access facilities in the Central District shall be designed to adequately accommodate both customers and employees.
6. Public sidewalks and walkways shall be designed to accommodate the handicapped and be kept clear of obstructions.
7. Provisions shall be made for bicycle transportation on specified streets within the City as designated on the San Carlos plan for bicycle routes.
8. Construct a connection from Crestview Drive to the existing Vista Point Interchange to Interstate 280 in order to accommodate traffic into and out of the Western Hills.
9. Intersection service levels should be maintained at level D or above.

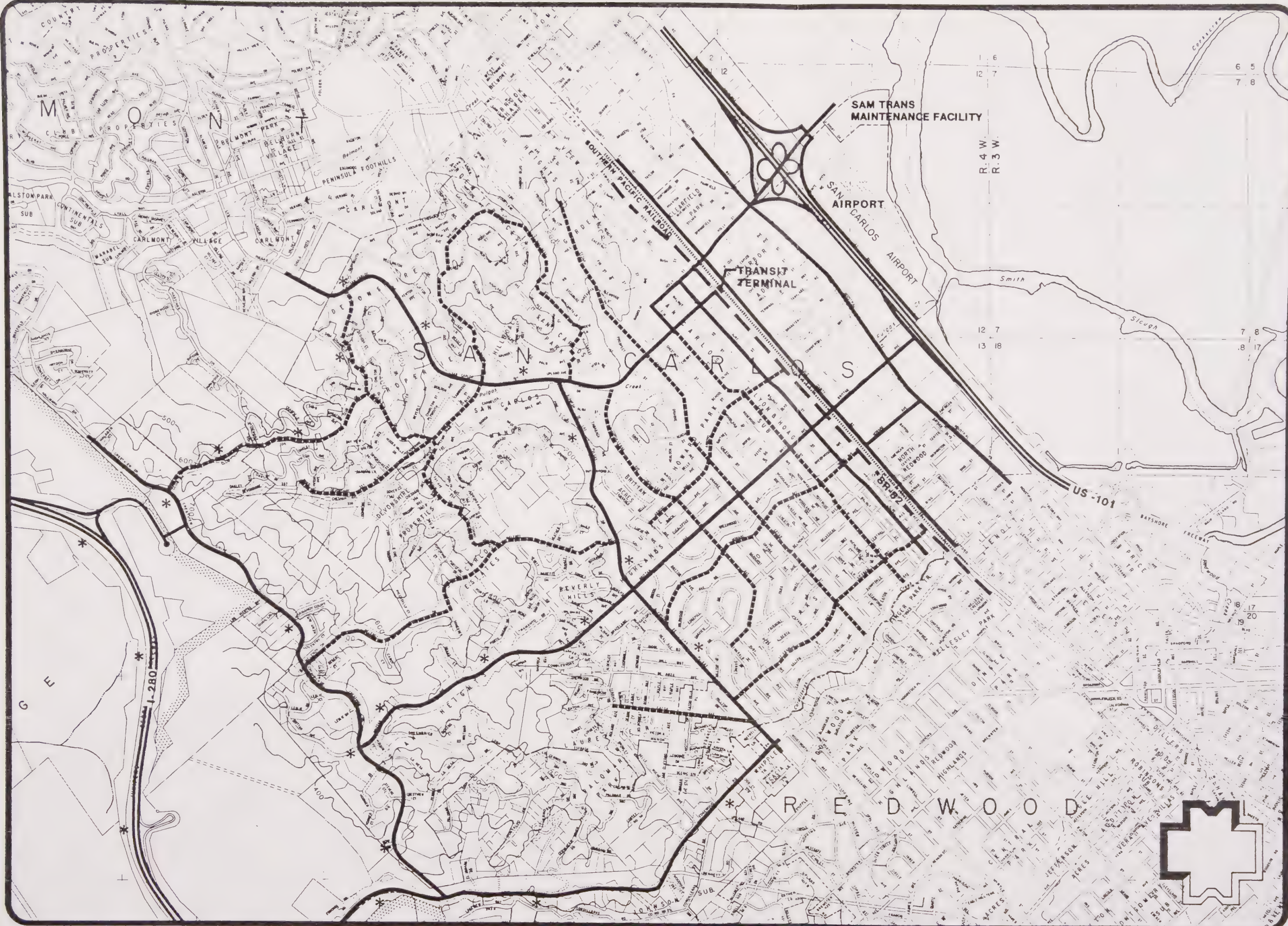
Transportation Policies

1. The City shall continue to support the operation and expansion of the San Carlos Airport as a regionally significant general aviation facility.
2. The City shall support the continued operation and upgrading of the Southern Pacific Railroad commuter service between San Jose and San Francisco.

3. The City shall support the California Department of Transportation improvement of the Southern Pacific Railroad station and adjacent parking facilities. In general, the station should act as a major transportation terminal for the City providing facilities for bus, auto parking and bicycle storage.

Scenic Highways Policies

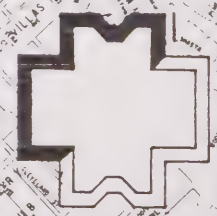
1. The City shall continue its program of protecting and enhancing local scenic roads through right-of-way protection, appropriate architectural controls and maintenance of existing public landscaped areas. The City of San Carlos shall have the primary responsibility for protection and enhancement of local scenic roads (e.g. payment for utility undergrounding).
2. If funds become available, the City shall undertake further undergrounding of utilities with priority for projects adjacent to local scenic roads.
3. Local scenic roads shall not be identified by signing.

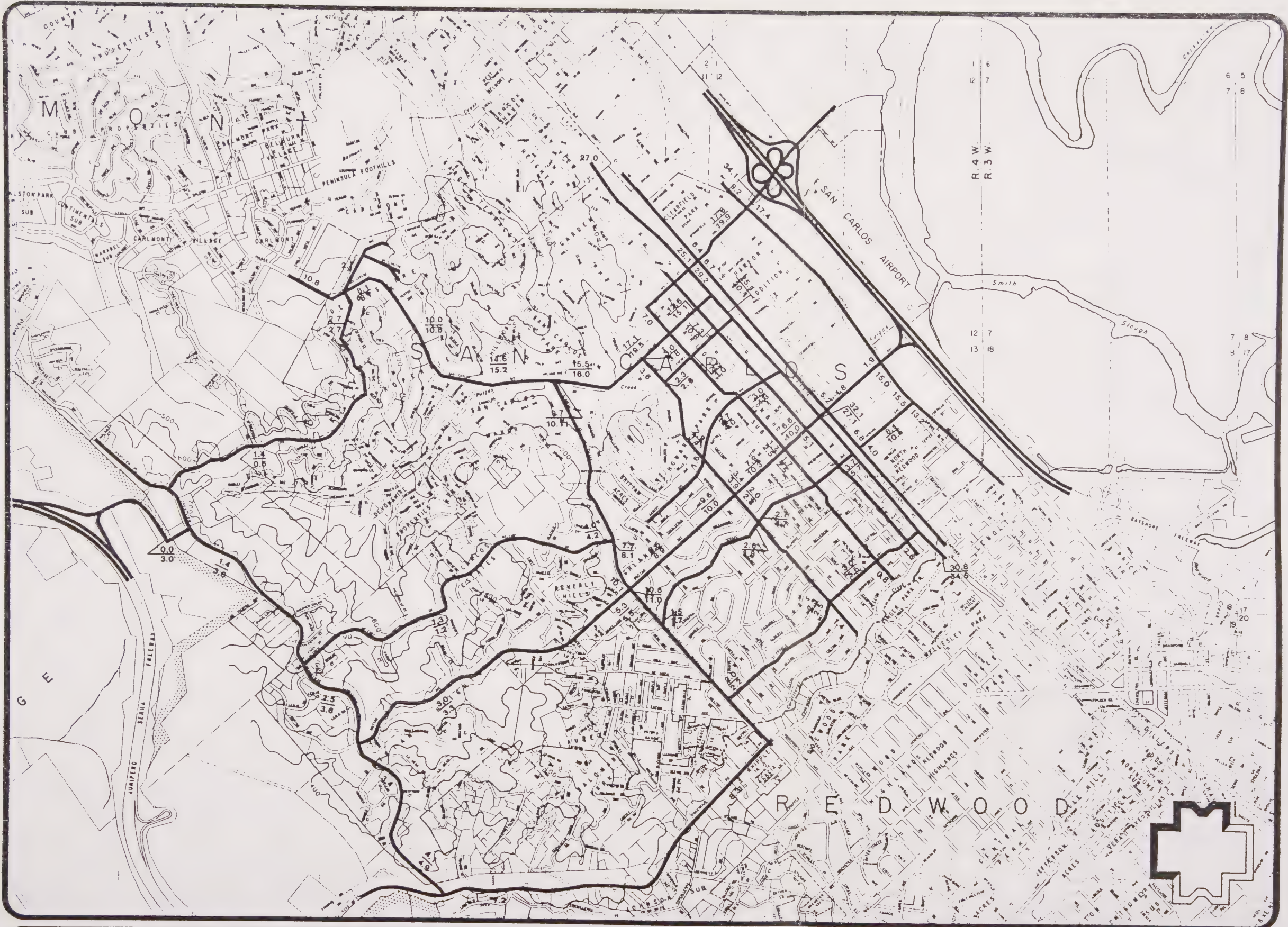


CIRCULATION, TRANSPORTATION, AND SCENIC ROADS

0 800 2000
SCALE IN FEET

- | | | | |
|--|---------------|--|------------------------|
| | FREEWAY | | COLLECTOR |
| | STATE HIGHWAY | | SCENIC HIGHWAY OR ROAD |
| | ARTERIAL | | |





TRAFFIC

- 1.0 1982 EXISTING
- 2.0 PROJECTED AT BUILDOUT

TRAFFIC VOLUMES x 1,000

DATA SOURCE: CITY ENGINEER, GEORGE E. COOK

HOUSING ELEMENT

HOUSING ELEMENT

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HOUSING ELEMENT

INTRODUCTION

Purpose

The Housing Element is intended to evaluate the existing and projected housing needs of all economic segments of the community and to develop policies and programs aimed at the preservation, improvement and development of housing. Total housing needs are expressed in terms of the community's internal need plus a portion of the Bay Area housing market need. Both short and long range objectives are included.

Definition of Income Categories

The U.S. Department of Housing and Urban Development (HUD) defines household income categories by a proportion of the median family income. For the lower income ranges this definition is a function of the percentage of a family's gross income that is allocated to housing payments. The general rule-of-thumb is 30% for families in the low and moderate category. The percentage may increase for the above moderate category.

Very Low Income	below 50% of median
Low Income	50-80% of median
Moderate Income	80-120% of median
Above Moderate Income	above 120% of median

In 1980 the following income limits were used by San Mateo County:

Number of Persons in Family								
Category	1	2	3	4	5	6	7	8
Median	\$16,375	\$18,750	\$21,063	\$23,375	\$24,875	\$26,313	\$27,813	\$29,215
Very Low	8,188	9,375	10,532	11,688	12,438	13,156	13,906	14,608
Low	13,100	15,000	16,850	18,700	19,900	21,050	22,250	23,372
Moderate	19,650	22,500	25,276	28,050	29,850	31,576	33,376	35,058

Concept of Housing Need

Housing need is defined as the difference between the demand for housing and the available supply for all income groups. For purposes of this

element the housing need includes both the needs of San Carlos and its share of the regional need.

Relation to Other Elements

The Housing Element is closely related to the Land Use, Open Space and Circulation Elements. In the Housing Element residential land use is translated into terms of household units to be accommodated in the future. Adequate sites for new housing are identified in the Land Use Element; the location, site area and terrain suitable for housing is related to both Open Space and Land Use; and, the capability of serving residential neighborhoods by an efficient circulation system is discussed in the Circulation Element. Environmental constraints to housing development are identified in the Seismic and Community Safety Elements, Noise Element, and Open Space Element.

State Housing Plan

California's Statewide Housing Plan, prepared in 1977, defines the five basic housing issues facing California:

1. Existing neighborhoods and housing should be conserved and improved.
2. The rising cost of new housing should be kept down.
3. Adequate housing for low and moderate income households should be found, and each jurisdiction should meet their appropriate share of regional housing demand.
4. Housing discrimination should be eliminated.
5. Housing information should be available for both developers and consumers.

The State Housing Plan recognizes several important guiding principals, among which is the belief that the private sector is, and should be, the major provider of housing. The government's role is to do what it can to make the private market responsive to the needs of all income, age, race and ethnic groups and to help private industry provide a wide variety of housing types, sizes and prices.

In 1980, Assembly Bill 2853 (Chaptered as Government Code Section 65580 et seq) was approved by the State Legislature. Its purpose was to amend and add to Title 7 of the Government Code. The new legislation requires counties and cities to prepare substantially more detailed housing elements.

Information Sources for the Housing Element

Data from the 1980 Federal Census has been relied upon as a primary information source for the Housing Element. Census data from 1970 has been updated whenever possible in this report by available data from the 1980 Federal Census.

The Census Areas and Population Map, Exhibit HA-1 of the Appendix, identifies Census Tracts 6091 through 6096 which encompass San Carlos. The map also delineates the 253 pertinent block districts which contain residential and housing information. The Block Areas listed in the tables of the Census are related to those identified numerically on the map. Population per block is also indicated on the map.

City records and staff participation were also primary information sources for this plan element. Additionally, the County of San Mateo, Association of Bay Area Governments and the State Department of Housing and Community Development provided considerable background data for the following analysis. All reference materials are listed in the bibliography.

ASSESSMENT OF HOUSING NEEDS

Population and Employment Characteristics of San Carlos

Background information on population and employment characteristics of San Carlos is appended to this plan element. The Appendix includes information on historic population growth, analysis of age characteristics of the population, location of people over 65 years of age, racial and ethnic composition of the community, and employment by occupation and location. In brief, the population of the community has been relatively stable for the past two decades and is likely to remain close to current levels to the year 2000. The 1980 Census counted 24,710 residents, a decline from the 26,053 counted in 1970. The projected population for the year 2000 is 27,300¹. In 1980, 21 percent of the population were children under 18 years old, 65 percent were between the ages of 18 and 64, and 14 percent were elderly, over age 64. San Carlos senior citizens reside in housing units dispersed evenly throughout the community, with the exception of a higher concentration of seniors which are housed in units in Census tract 6092.

The social and economic profile of San Carlos residents presented in the Appendix reveals that the population is predominantly white and that they are largely moderate income families. The median household annual income was \$25,293 in 1980, compared to a County median of \$23,175. Major occupations in 1980 were professional, managerial and clerical positions and employment locations were largely in San Mateo County. The labor force consisted of 37.5 percent women and 62.5 percent men in 1970. Unemployment was 3.9 percent for men and 5.2 percent for women at that time.

Housing Characteristics of San Carlos

Background information on housing and household characteristics of San Carlos is appended to this plan element. The Appendix includes data and analysis of the number, condition and cost of housing units; the size, tenure and income of households; and trends in building permit activity.

In 1980, 10,350 housing units were counted in San Carlos by the Federal Census. The rate of housing construction over the last 11 years has averaged 148 new units per year. Construction of new homes over

¹ Association of Bay Area Governments, Projections '83

the past three years has been at the lowest levels observed during the 10 year period with the exception of a slump in activity in 1978. The size of the average dwelling unit in San Carlos is comparable to the County average. The mean San Carlos housing unit has 5.4 rooms compared to a County-wide mean size of 5.1 rooms. The median age of residential structures in San Carlos is between 30 and 40 years old. The condition of nearly all residential structures in San Carlos is well-maintained according to City officials, whose descriptions are reinforced by Building Department records showing an average of 437 residential alteration and repair permits per year issued over the last 10 years. A windshield survey of all residential structures in the older Census Tracts of San Carlos during February, 1983 revealed a total of 18 buildings needing some type of rehabilitation. Only 5 structures were in need of major rehabilitation.

The City's mean household size has declined over the last decade from 2.88 persons per unit in 1970 to 2.42 persons per unit in 1980. The 0.46 person decline in San Carlos household size compares to a County-wide decline from 2.9 persons per unit in 1970 to 2.5 persons per unit in 1980. Overcrowded conditions in the City were recorded for 198 units by the 1970 Census.

The average length of tenancy for San Carlos residents in 1980 was approximately 5 years. The above-average term of tenancy is probably related to the high proportion of ownership to rentership observed in San Carlos. In 1980 there were 71 percent ownership households compared to 29 percent rentership households in San Carlos. For comparison, County totals were reported as being comprised of 40 percent rentership households and 60 percent ownership households.

The median priced house in San Carlos was \$141,500 in 1980. The County median sales price was \$124,400, therefore the cost of home ownership was at least 13 percent higher in San Carlos than the average in San Mateo County.

Contract rent levels in 1980 were also shown to be slightly higher than County levels. The median San Carlos rent was \$327, at that time, compared to the County median of \$313.

Household Income to Housing Cost Correlation

Table H-I is an analysis and summary of 1980 census data, comparing local household income to local housing cost. The purpose of the analysis is to determine housing unit availability in each income category. Income categories are based on the San Mateo County median income in 1980. The correlation reveals some conclusions about the level of payment required to live in San Carlos compared to the ability of local residents to afford housing costs.

TABLE H-1 INCOME/COST CORRELATION

NUMBER OF HOUSEHOLDS WITH INCOMES IN SPECIFIED CATEGORIES			NUMBER OF HOUSING UNITS EXISTING IN 1980 AND AFFORDABLE BY SPECIFIED INCOME GROUP		
			RENT-OCC.	OWN.-OCC.	TOTAL
Very Low	1,740	17.3%)	392	4,023	4,415
Low	1,617	16.1)	1,696	1,330	3,026
Moderate	2,000	21.9)	852	1,830	2,682
Above Moderate	4,496	44.7			
Total	10,053	100.0%	2,940	7,183	10,123
Median Rent			355		
Median Value of Owner Occupied Unit			151,303		
Median Household Income			25,293		
Number of Households Below Poverty Level			302		

MAXIMUM AFFORDABLE HOUSING COSTS BY INCOME GROUP

INCOME GROUP	1980 GROSS INCOME		MAXIMUM AFFORDABLE HOUSING COST	
	ANNUAL	MONTHLY	RENTER	OWNER*
Very Low	11,560	964	230	400
Low	18,500	1,542	460	650
Moderate	27,750	2,315	690	1,000
Above Moderate	27,750+	2,315+	690+	1,000+
Median	23,125	Household		

* Monthly Mortgage = 0.95% of house value

The California Department of Housing and Community Development has provided communities with a "Methodology for Calculating Lower Income Overpayment." This methodology has been used to assemble Table H-1 and H-2, using 1980 Census Data.

TABLE H-2: RENTER HOUSEHOLD INCOME BY GROSS RENT AS A PERCENT OF INCOME

Rent as \$ of Income	\$ 0 4,999	\$5,000- 9,999	\$10,000- 14,999	\$15,000- 19,999	\$20,000 or more	Total
0 - 19%	0	0	65	83	715	863
20 - 24%	0	8	75	134	270	487
25 - 34%	8	72	228	137	173	618
35%+	216	339	178	95	14	842
Not Completed	<u>36</u>	<u>6</u>	<u>0</u>	<u>12</u>	<u>26</u>	<u>80</u>
Total	260	425	546	461	1198	2890

Total household overpaying = 1,203

The boxed figures in Table H-2 represent the total number of lower-income renters, plus those renters in the income range from \$15,000 (i.e., lower-income limit) to \$19,999 (i.e., the breakoff figure for the fourth income range used in the 1980 Census tables) that are "overpaying," (i.e., paying more than 25% of their household income for housing). It was therefore necessary to calculate the number of households in the fourth income range that are lower income. The final number of rentership households who are overpaying, and are also lower income is 1,203, or 42 percent of the total renting households.

TABLE H-3: OWNER HOUSEHOLD INCOME BY SELECTED MONTHLY HOUSING COSTS
AS A PERCENT OF INCREASE

Housing Cost as a % of Income	\$ 0 4,999	\$5,000- 9,999	\$10,000- 14,999	\$15,000- 19,999	\$20,000 and more	Total
0 - 19%	0	128	255	324	3053	3760
20 - 24%	26	85	51	84	411	657
25 - 34%	14	38	77	60	635	824
35%+	81	196	155	109	377	918
Not Computed	<u>36</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>36</u>
Total	157	447	538	577	4476	6195

Total households overpaying = 679

The boxed figures in Table H-3 represent the total number of lower-income non-condominium ownership households, plus those owners in the income range from \$15,000 to \$19,999, that are "overpaying." After performing the necessary calculations to determine the number of households in the fourth income range that are lower income, it was determined that 679 or 11 percent of the non-condominium ownership households are overpaying.

For the City as a whole it appears that there is some overpayment in the lower income groups, particularly in the rentership category where 42 percent of the low income households are spending more than 25 percent of their income on housing. For this reason the City has addressed their housing assistance programs, such as the shared housing program, mixed-use district zoning, and second housing units program, toward rented households.

ABAG Housing Need Determination

The Association of Bay Area Governments (ABAG), in their publication titled Housing Need Report, has determined the existing and projected housing need for the Bay Area region. They have also calculated, for counties and cities, a share of such need. The "existing housing need" is defined as the housing need for the Bay Area and its counties and cities in 1980.

"Projected housing need" figures represent the projected shares of the region's housing need. The projected need numbers include the existing need and the figures in Table 2 and 3 are not intended to be added.

TABLE H-4 EXISTING HOUSING NEED, ABAG DETERMINATION

<u>District</u>	<u>1980 Existing Need</u>	<u>Need as % of 1980 Housing Stock Available</u>
San Carlos	77	0.75
San Mateo County	1,592	0.69

TABLE H-5 PROJECTED HOUSING NEED, ABAG DETERMINATION

	1990 Projected Households	Total Available Housing Needed in 1990	1985-90 Projected Increase in Housing needed (Total)	<u>Income Breakdown</u> Above			
				Mod- erate	Mod- erate	Low	Very Low
San Carlos	11,640	11,479	1,129	520	237	169	203
San Mateo County	244,120	256,699	23,499				

The projected increase in housing needed, 616 units over a five year period from 1980 to 1985, translates to a rate of 123 units per year, much higher than the average rate of 70 units per year, which occurred during the 1970's. Of the 616 units needed, 333 are intended

to be homes for above-moderate income families, 92 for moderate-income families, and 123 for very low-income families.

How ABAG Determinations Compare with Local Need Calculations. The income category which was emphasized in the ABAG calculations is the above-moderate income category. This corresponds with the previous analysis of local housing need.

Needs of Special Groups: Handicapped, Elderly, Large Families, Families with Female Heads of Household. While no accurate statistics are available documenting the number of handicapped persons living in San Carlos, estimates are available from local organizations for the disabled. It is estimated that some 80,000 handicapped persons between the ages of 16 and 60 currently reside in San Mateo County. If that County-wide ratio were the same in San Carlos, then over 3,000 disabled persons would reside in the City. This group has special difficulties in finding housing. Their problems generally include fixed incomes, accessibility, discrimination and mobility.

The 1980 Census provides counts of the number of households or other special needs groups, as follows:

<u>Special Groups</u>	<u>Number</u>	<u>% of Households</u>
Large Families	668	6.6%
Elderly Households	2239	22.3
Above Poverty Level	2168	
Below Poverty Level	71	
Households with Female Heads	697	6.9

The Statute referring to Housing Elements indicates an analysis of farm worker households should be included in the jurisdiction's planning document. In San Carlos, only 86 of the reported 13,743 employed persons had occupations in the farming, forestry and fishing category. This is less than 1% of the work force living in the City and is considered insignificant from a planning point of view.

INVENTORY OF RESOURCES AND CONSTRAINTS TO MEETING HOUSING NEEDS

Inventory of Land Suitable for Residential Development

Vacant Sites. Exhibit H-1 is a map of San Carlos which denotes the location of all vacant land in the City. A residential development suitability rating of Class A, B, or C has been assigned to each vacant parcel on the basis of a classification system. The suitability classification system relies on two sets of rating criteria. Criteria Set A describes the availability of infrastructure (i.e., roads, sewer, water, public transit and other public facilities) to the vacant parcel.

Criteria B describes the environmental constraints which exist for developing the vacant parcel. Environmental constraints to residential development are shown graphically in the other plan element exhibits. They consist of geotechnical hazards, noise impacts, wildland fire hazard, industrial accident hazard, flood hazard and biologic resource conflicts.

Site Suitability in Terms of Zoning, Public Facilities and Environmental Constraints. Table H-4 is a description of each vacant parcel by size, allowable density, number of residential units now present on the parcel, maximum number of potential future units allowable under zoning regulations and maximum number of future units suitable based on the following suitability classification scheme.

SUITABILITY CLASSIFICATION	DEFINITION
Class A	Apparently suitable for residential development.
Class B	Apparently suitable for residential development conditional upon mitigation of environmental and public facility impacts, mitigation measures likely to include reduction of allowable density.
Class C	Apparently unsuitable for residential development.

Sites with Redevelopment Potential.

Public redevelopment of property in San Carlos is not currently an option acceptable to the City. Private actions by individual residents of San Carlos have combined to preserve the overall quality of housing throughout the community.

TABLE H-6 VACANT LAND SURVEY

Parcel #	Zoning	Approximate Area (Acres)	# of Units Allowable Under Zoning	Suitability Classification	# of Units Suitable
1	C-4	.4	0	C	0
2	*	.6	0	C	0
3	CS-H	.2	0	C	0
4	C-2-H	.2	0	C	5
5	C-2H	.2	0	C	5
6	C-2-H	.2	0	C	5
7	R-3	.4	16	B	10
8	R-1	.2	1	A	1
9	P-C	.7	3	B	3
10	*	8.5	5	*	5
11	P-C	144.7	301	B	301
12	P-C	15.0	39	A	39
13	*	14.0	7	*	7
14	P-C	22.0	45	B	45
15	*	80.0	290	B	32
		289.1	707		458

KEY TO ZONING DESIGNATIONS:

Zoning	District	Maximum Density (Dwelling Units Per Acre)
CS-4	Commercial Service	0
CS-H	Highway Service Commercial	0
C-2	Central Commercial	40
R-3	Restricted Multiple Family Residential	6
P-C	Planned Community	Varies

* Unincorporated areas within City's Sphere of Influence

Lands adjacent to the Central Commercial district of San Carlos delineated in Exhibit H-1 is currently zoned for a higher intensity land use than it now supports. The Planning Department is in the process of analyzing the feasibility of expanding the public services in the subject area to allow the higher intensity land use reflected in the Zoning Ordinance. The outcome of that feasibility study will result in a policy decision on future residential intensity potential in the fringe portions of the primarily commercial area. At the current time, without improved support facilities, such potential is limited.

The San Carlos School District is currently reevaluating the future need for several schools and has already decided to close some schools in the district. The redevelopment of these sites into residential land uses is another issue which is being studied by the Planning Department, School District and City officials. The school district properties are described in Table H-5.

TABLE H-7 LANDS OF SAN CARLOS SCHOOL DISTRICT

School	Status	Approximate Area (Acres)	# of Units Allowable Under Zoning	Suitability Class	# of Units Suitable
San Carlos High	Closed	41.0	117	B*	67
Central	Open	9.2	37	B	26
Tierra Linda	Closed	20.4	56	B	32
Arundel	Open	11.0	36	B	23
Brittan Acres	Open	7.0	28	B	20
Heather	Open	14.0	39	B	22
Laureola	Closed	6.0	24	A	68
White Oaks	Open	3.3	13	B	9
School Site 8	Vacant	15.0	39	A	39

* Classified B due to traditional recreation use of a portion of the site. Residential use is contingent upon continued public availability of recreation areas.

Sites Suitable for Factory-Built and Mobile Homes. All vacant parcels identified on Exhibit H-1, with Class A or B suitability ratings, are appropriate for factory-built or mobile housing. It is probable that non-governmental constraints, such as property costs, will severely limit this type of housing development in San Carlos in the future, however.

Analysis of Potential and Actual Government Constraints

Land Use Controls. The General Plan and the Zoning Ordinance of a community are two primary tools for planning and regulating land use.

1. General Plan. The City of San Carlos is in the process of updating its General Plan. To ensure consistency throughout all elements of the General Plan, it was necessary to review and update other related environmental parameters concurrently with the Housing Element. After review of environmental information on San Carlos, it was determined that the primary environmental constraints to residential land use in the City are geotechnical hazards, wildland fire hazards, industrial accident hazards, biotic resource protection, and noise level incompatibility. These parameters are graphically presented in the exhibits of the other General Plan elements and briefly described below.

- a. Geotechnical Hazards

Seismic Related Hazards. The city limit of San Carlos is located approximately 1.5 miles from the San Andreas Fault, which has a long history of earthquake activity. The current generation of San Carlos residents, along with residents of the entire San Francisco Bay Area, are likely to experience an earthquake of comparable magnitude to the severe quake which occurred in 1906. Local effects from a strong earthquake will probably include strong shaking, incidents of ground failure, and incidents of liquefaction.

The most intense shaking will occur in the flat, alluvial areas as opposed to hillside areas. Secondary effects of shaking will depend on very local geomorphic conditions. The types of upland bedrock which are present in San Carlos are susceptible to ground failure, including landsliding and rockfalls. The alluvial fan deposits which occupy the flatland areas in San Carlos

are also susceptible to soil failure during an earthquake, including possible lurching and fissuring. Additionally, Type A1 and A2 alluvial deposits have been classified as possessing moderate or high liquifaction risk.

Flooding. The newly revised 100-year flood zone for San Carlos is also mapped in the Seismic Safety Element, and is based on National Flood Insurance information.

Slope Stability and Foundation Condition Problems. Problems of slope stability are present in the upland units of San Carlos, particularly in areas where soil creep and land-sliding have occurred previously. Such areas are most sensitive to activities which tend to reduce slope stability, principal among which are the addition of unusual amounts of liquid, undercutting slopes and loading the tops of slopes. Landslide areas are mapped on the Geologic Units Exhibit of the Seismic Safety Element.

Foundation conditions are generally good in the City. The chief areas of concern are the Type B, upland bedrock units shown in the Geologic Hazard Map, Seismic Safety Element, which have poor to fair foundation conditions.

- b. Wildland Fire Hazard. Wildland grass and brush fires have historically swept through the foothills of San Mateo County. Fire is an ecological component of many California biomes including the oak savanna habitat which is present in remnants throughout western San Carlos. Until recently, residential development did not exist in the fire zones, but during the 1960's and 1970's homes were constructed at higher elevations and community exposure to brush fires has been expanded. This danger is particularly severe in summer months when grass and brush are dry and when brisk winds from the north and northeast are blowing. The Wildland Fire Zone, indicated on the exhibit in the Community Safety Element, was compiled by the South County Fire Department. The map serves as an indicator of those portions of San Carlos in which project proposals will be subject to scrutiny for wildland fire safety. Building materials, landscaping species, project access and other standard fire safety code guidelines may all be regulated as conditions of project approval.
- c. Industrial Accident Hazards. The San Francisco Bay Area is a

national leader in high technology manufacturing. Inherent in most high technology manufacturing processes is the use of hazardous materials. The number of industrial cities and the frequency of hazardous materials handling comprises a residential land use conflict for many areas of San Carlos. A map showing the location of all industrial sites in the City which use hazardous materials accompanies the Community Safety Element.

- d. Noise Impacts. There are two primary districts in San Carlos where future noise impacts will likely reach "unacceptable" levels by 1995. New development of residential land uses should not be undertaken in these zones, based on compatibility standards set by the Environmental Protection Agency and Title 25. The zones are indicated on the exhibits of the Noise Element.

- e. Biological Resource Conflicts

Additional recreational and biological resources in the City are located predominantly on the intensely developed west side of San Carlos and are contained in two primary habitats. The natural vegetation community in the area is oak woodland or oak savanna, which is still represented in remnant stands mapped in the Open Space Element. Furthermore, the intermittent streams in San Carlos support a zone of riparian habitat, also indicated on the Open Space Map. A County designated combination hiking-and-biking trail is located along Alameda de las Pulgas in San Carlos. The alignment of the trail allows public access to views of both communities described above.

The San Francisco Bayfront lands along Phelpps Slough support an estuarian habitat which is an important biotic resource for the City. The area is delineated in the Open Space Element.

- 2. Zoning Ordinance. The City of San Carlos Zoning Ordinance is a precise plan designating the land uses, height, bulk, density and parking standards throughout the City. The Zoning Plan and Ordinance have been designed to be consistent with the General Plan. The Ordinance provides a variety of residential use designations with densities ranging from one dwelling unit for each two acres up to eighty units per acre. Significant acreage is allotted to each category. If all of the available land were developed in accordance with the zoning some 1,850 dwelling units could be added to the City's housing stock. The Zoning Ordinance is considered only a minor constraint to housing development.

Building Codes. The latest addition of the Uniform Building Code is enforced in San Carlos. The City Building Department sees that new residences, additions, auxiliary structures, etc., meet all of the latest construction and safety standards. Building permits are required for any construction work.

City Processing and Permit Procedures and Fees. Building permits must be secured before commencement of any construction, reconstruction, conversion, alteration or addition. Approval of permit applications is based on conformity with the Zoning Ordinance, although the City Council has the power to grant variances from the terms of the Ordinance within the limitations provided in the ordinance. Building permits generally are processed in a few weeks, Variance requests approximately 1 1/2 months and Conditional Use Permits require 2 1/2 months.

Amendments and reclassifications to the Ordinance can be made by the City Council subject to applicable provisions of the State Laws and when initiated by citizen petition or resolution of the Planning Commission or Council. Procedures for amendments and reclassifications are stated in the Zoning Ordinance.

Availability of Assistance Programs. San Carlos does not have the financial resources or sufficient staff to undertake major housing assistance programs without substantial backing by state or federal agencies. Recent reductions in funding levels of federal and state assistance programs places the City in a more tenuous position. Therefore, the lack of availability of outside assistance programs acts as a constraint to the provision of housing for families of modest incomes.

Site Improvements. A complete description of the transportation circulation system of San Carlos is included in the Circulation Element. All public utilities, including sewage treatment facilities, water supply, storm drainage, and solid waste disposal are described in the Land Use Element. Site improvements exist throughout the community. Roads, sewer mains and water lines would all require extension to areas outside the City boundaries.

According to a recently completed Wastewater Treatment Capacity Study, the City of San Carlos has additional surplus sewage treatment flow capacity to accommodate the following amounts and types of land use.

TABLE H-8 ALTERNATIVE LAND USE DEVELOPMENT POTENTIAL WITHIN SEWAGE TREATMENT SURPLUS

Land Use	Flow (MGD) Per User	Number of Additional Users which could be accommodated within the City's Surplus Flow ²
Residential	.000175	2194
Commercial	.000472	813
Industrial	.0331	11
Institutional	.00252	152

¹ Based on averages of current users, "San Carlos Wastewater Treatment Capacity Study," November 1981, Martin.Carpenter.Associates.

² Additional users may be limited by available BOD capacity.

Potential and Actual Non-governmental Constraints

Primary among non-governmental constraints to housing development in San Carlos, particularly low and moderate income housing, is the price of real estate. When compared against other Peninsula cities, San Carlos is a relatively moderate housing market. Table H-8 presents a recent survey of home values, compiled this year by Coldwell Banker Residential Real Estate Services. However, San Mateo County, when compared to the entire Bay Area, is second only to Marin County in home values, as recently revealed in the 1980 Census.

TABLE H-9 MEDIAN HOME VALUES, 1980

County	Non-Condominium Value (\$)
Alameda	\$ 85,300
Contra Costa	94,600
Marin	151,000
Napa	78,200
San Francisco	104,600
San Mateo	124,400
Santa Clara	109,400
Solano	67,500
Sonoma	88,400

The cost of land accounts for a significant portion of the housing costs in San Carlos. In 1983 finished single family lots were priced between \$80,000 and \$175,000. Raw land with surrounding improvements available for development with townhouses or low density multiple family residential was priced from \$40,000 to \$45,000 per unit.

Another constraint to housing development is the availability of financing for homes, which is at a high level in the Bay Area. Current mortgage rates are variable or negotiable, ranging around 12-14 percent.

H-10 HOUSING VALUES OF PENINSULA CITIES

CITY	VALUE IN DOLLARS*		
	LOW	MEDIAN	HIGH
Atherton	350,000	600,000	900,000
Belmont	135,000	189,000	329,000
Burlingame	179,000	259,000	350,000
Foster City	149,950	225,000	335,000
Hillsborough	387,000	479,500	685,000
Los Altos	195,000	275,000	340,000
Menlo Park	180,000	280,000	650,000
Millbrae	154,900	259,950	350,000
Mountain View	155,000	195,000	250,000
Palo Alto	195,000	300,000	750,000
Redwood City	120,000	200,000	500,000
San Carlos	140,000	220,000	500,000
San Mateo	117,000	245,000	390,000
Sunnyvale	135,000	180,000	225,000
Woodside	225,000	400,000	900,000

Source: Miller, Jack, "How Location Boosts Prices Sharply" San Francisco Chronicle/Examiner. Home Section, January 31, 1982.

* Due to economy, values are currently 10-15% lower.

Summary of Resources and Constraints to Housing Development

A total of approximately 290 acres of vacant land exist in the City of San Carlos, 2 acres of which are classified as apparently unsuitable for residential development.

Without considering environmental constraints, the vacant properties identified could support approximately 700 units under current zoning regulations. After examining environmental and infrastructure constraints it appears that only 460 units would be feasible, appropriate, and consistent with city and county land use policies and state environmental regulations.

Significant environmental constraints include topography and geotechnical hazards, i.e. earthquake, flooding and ground failure. Non-governmental constraints include the County's very high property values and high financing rates.

HOUSING GOALS, OBJECTIVES AND POLICIES

General Strategy

San Carlos will emphasize local incentives and attempt to eliminate disincentives, to help private investment generate more housing. In addition, the community intends to utilize its existing housing stock to partially satisfy community housing needs. The City does not have the desire, resources or administrative structure to become an active participant in the production, financing or provision of housing. The City does, however, possess the desire to work with private enterprise through its incentive and regulatory powers to encourage the housing development, or housing opportunities, and improvement and conservation of the existing housing stock.

San Carlos has a long history of providing for itself through local incentive. Consistent with the policy, the City does not intend to seek outside grants that would require establishment of new local administrative functions, significantly add responsibilities on existing City personnel or require the addition of new personnel. Minimal direct involvement in providing affordable housing will be undertaken by the City staff. Instead, maximum effort will be placed on local incentives, controls and the elimination of disincentives to achieve a wider range of unit types and sizes in residential projects so that some lower cost units are provided each year. The staff will attempt to further streamline the processing and permit procedures. Regulatory concessions will be made to promote affordable housing when it is appropriate and legally possible to do so.

Methods of Achieving Lower Cost Housing

Above moderate income housing has, and will likely continue to be provided by normal market forces. This housing traditionally has taken the form of single family detached or town house units. More affordable housing is generally provided in multi-family structures and particularly rental units. Where new multiple family developments are proposed, the City staff should suggest alternatives that could lower the cost of units, thereby promoting more affordable housing. During initial discussions with City staff, during the environmental review process and during the review of project proposals by the Planning Commission and City Council the following approaches should be considered.

A. Design and Layout of Units

1. The floor area of some units could be reduced, while maintaining minimum building code requirements.

2. The amenities of some of the units such as convenience bathrooms, family rooms, large patios or decks, and oversized rooms could be eliminated.
3. The cost of on-site construction can be reduced by using modular construction for some of the units with proper architectural controls.
4. Allow for some density bonuses to encourage the provision of affordable housing.

B. Reduced Land and Maintenance Costs for Some Units

1. The land area cost per unit could be reduced by providing some density bonuses.
2. Maintenance costs could be reduced for some of the units in condominium projects by providing fewer common facilities (open rather than garage parking; minimal landscaped areas to maintain; located near public recreational facilities so that minimum on-site facilities are necessary).

C. Maintain Lower Cost Housing Resources

1. Review proposals for conversion of existing apartments to condominiums in order to suggest alternatives which would reduce the cost of improvements during the conversion process (e.g. reduction of amenities).

GOAL I: FACILITATE THE PRIVATE DEVELOPMENT OF HOUSING IN AN ATTEMPT TO MEET THE HOUSING NEED IDENTIFIED FOR SAN CARLOS

Objectives

- A. Realize the construction of approximately 1130 new housing units in San Carlos during the next five years.
- B. Increase the available housing stock for the various household income levels by the following percentages during the next five years:

Above moderate	46 percent*
Moderate	21 percent
Low	15 percent
Very low	18 percent

* Extrapolation of ABAG numbers

- C. Encourage innovative condominium design techniques to promote more affordable housing through flexible unit sizes and amenities by using ordinance incentives.
- D. Encourage mixed residential and commercial uses in the central district as a means of providing more affordable housing near transportation, jobs and shopping. Implementation will be through Zoning Ordinance incentives.
- E. Increase the rental housing stock by condominium construction with a percentage of investor owned units made available for rent. Implementation will occur through normal market processes.

Policies

- A. Within the limitations of the private housing market, the City shall work with private developers to encourage new housing development.
- B. The City shall encourage the production and availability of more affordable housing through the following methods:
 - 1. Implementation of programs allowing sharing of housing.
 - 2. Changing zoning restriction (e.g., parking and elderly projects) where appropriate.
 - 3. Suggesting the development of "no-frills housing".
 - 4. Encouraging better use of land at densities permitted by the zoning ordinance.
 - 5. Implement a mixed use zone in the central district.
 - 6. Discourage conversion of existing affordable rental structures to condominium unless an adequate number of rental units are available within the City.
 - 7. Implement a "second dwelling unit" ordinance for application in single family residential districts.
- C. The City shall encourage innovative design of condominium projects to provide more flexible unit sizes and amenities.
- D. The City shall encourage new condominium construction which provides for a portion of investor owned rental units.

GOAL II: PROMOTE PRIVATE EFFORTS TO CONSERVE AND IMPROVE SAN CARLOS'
EXISTING HOUSING SUPPLY

Objectives

- A. Promote the improvement, maintenance and enhancement of the existing housing stock through ongoing private remodeling efforts.
- B. Obtain support from local lending institutions to provide loans for property improvement..
- C. Provide sufficient areas within the City to allow for private transition from single family to multiple family residential without encroaching on predominantly single family neighborhoods.

Policies

- A. The City shall promote conservation and improvement of the condition of its existing housing stock and will encourage remodeling and expansion efforts by homeowners.
- B. The City shall seek support of local lending institutions in providing the capital for home improvement, maintenance and enhancement.

GOAL III: GIVE SPECIAL CONSIDERATION TO THE EXPANSION OF HOUSING
OPPORTUNITIES FOR ELDERLY, HANDICAPPED AND LOW- AND
MODERATE-INCOME PERSONS

Objectives

- A. Increase the supply of housing for the elderly particularly in the multi-family areas adjacent to the Central District.
- B. Enforce Uniform Building Code regulations regarding provision of access for handicapped in multiple residential structures.
- C. Support the conservation and development of affordable housing for citizens of modest means.

Policies

- A. The City shall encourage the development and expansion of housing opportunities for the elderly through techniques such as smaller unit sizes, parking reduction, common dining facilities and fewer, but adequate amenities.

- B. The City shall enforce the Uniform Building Code regulations regarding provision of handicapped access in multiple residential structures.
- C. The City shall encourage the production and availability of more affordable housing through the methods described under Goal I.

GOAL IV: PROMOTE HOUSING OPPORTUNITIES FOR ALL PERSONS REGARDLESS OF RACE, SEX, MARITAL STATUS, ANCESTRY, NATIONAL ORIGIN OR COLOR

Objectives

- A. Eliminate, to the extent feasible, through City actions, discrimination in housing.

Policies

- A. The City shall actively support housing opportunities for all persons regardless of race, sex, marital status, ancestry, national origin or color.

HOUSING PROGRAMS

This section is intended to establish a five year schedule of actions which the City is undertaking or intends to undertake to implement the policies and to achieve the goals and objectives of the Housing Element. The programs are generally intended to be implemented through the administration of land use and development controls and the provision of regulatory concessions and incentives.

Identification of Housing Sites to be Made Available

Statutory Requirement. The California Government Code requires that the Housing Program identify adequate sites which will be made available through appropriate zoning and development standards and with public services and facilities needed to facilitate and encourage the development of a variety of types of housing for all income levels, including rental housing, factory-built housing and mobile homes.

Description of Programs

- A. Construction of new housing - The map entitled "Parks, Open Space and Vacant Land" generally identifies those areas which are available for the construction of new housing. The following table lists some of the major areas available for construction of new housing.

<u>SITE</u>	<u>APPROXIMATE POTENTIAL DWELLING UNITS</u>
School Site 8	55
Laureola School Site	68
Western Hills	130
Crestview Park	159
Portofino Avenue	25

- B. Construction of new multiple-family housing - Areas currently general planned for multiple-family housing and zoned R-3 and R-4 have sites which ultimately could accommodate an additional

1200 dwelling units. This area would be most appropriate for expansion of housing opportunities for the elderly and low- and moderate-income households. Some expansion of the infrastructure of this area will be required prior to substantial additional development. Some streets will require widening and sewer and drainage facilities will require expansion. Specific development policies are contained in the San Carlos Multi-Family Area Study.

- C. Expansion of rental housing - While it is anticipated that the development of rental apartment buildings in the future will be limited, construction of new multi-family condominium buildings adds to the rental market. In San Carlos experience indicates that from 30 to 70 percent of new condominium units are investor owned and rented. By this method the rental housing stock within the community is expanded and more units are made available for low- and moderate-income households.
- D. Factory built and mobile homes - All vacant parcels identified on the Housing Sites map are appropriate for factory-built or mobile housing. It is probable that non-governmental constraints, such as property costs, will preclude this type of development in San Carlos in the future, however.

Resource Commitment. Ongoing Planning and Building Department staff review of building and subdivision plans for new housing construction.

Estimated Results. It is anticipated that from 100 to 125 new dwelling units per year will be constructed in San Carlos over the period of 1983 to 1985. This would result in the construction of at least 600 to 625 new dwelling units during the next five years. Based on building permit history, over half of these dwelling units should be in the multi-family category.

Assistance in the Development of Housing to Meet the Needs of Low- and Moderate-Income Households

Statutory Requirement. The California Government Code requires that the programs assist in the development of adequate housing to meet the needs of low- and moderate-income households.

Description of Programs.

- A. Shared housing - This program could be sponsored by a non-profit organization that arranges for the placement of seniors, students and others needing housing with other seniors or individuals who have housing available and wish to accept a boarder. The organization

would maintain a list of both those people who have available space and those who need to rent or otherwise obtain housing in the community. The City supports this program through the following action:

1. City support and approval of the program through adoption of a formal resolution of support.
 2. Provision of limited office space and telephone for a part-time organization worker.
 3. City participation in funding, advertising and information dissemination about the program.
- B. Mixed-Use Land Use District - Currently, the City of San Carlos restricts development in its retail core area to commercial and office uses only. The amendment of this policy and corresponding zoning regulations could help to encourage the development of residential uses on the upper floors of multi-story buildings in the commercial core. This would expand housing opportunities in the area closest to transportation and shopping. The City's policy of limiting ground floors to retail commercial uses should remain in effect.
- C. Provision for special low- and moderate-income groups
1. Elderly - The City's primary effort to promote housing for the elderly will be focused on encouragement of elderly housing development in the multiple-family areas adjacent to the Central District. Encouragement will take the form of zoning for higher densities, working with developers to provide housing with amenities for the elderly residents, reduction in parking standards where guarantees are provided that the structure will continue to be used for elderly housing, and reduction in unit sizes. Recreation facilities in such buildings could be reduced due to close proximity to the San Carlos Senior Citizen Center.
 2. Handicapped - All new multiple residential structures in the City of San Carlos are required to be accessible to the handicapped as provided in the 1979 edition of the Uniform Building Code. The City enforces these provisions through plan review by the Building Department. This will help increase the supply of residential units accessible to the handicapped through new construction. In addition, any condominium conversions allowed in the City are required to meet the current Building Code

standards which include provisions for handicapped access. Although conversions occur on limited basis, this provision requires upgrading of older buildings, making them more accessible to the handicapped.

3. Young working families and single families - San Carlos supports the provision of sufficient housing opportunities for young working families and single parent families. Opportunities for this group occur in several forms in the City. The community's effort in preserving the rental stock through limitations on condominium conversions is one method of retaining existing affordable housing. Construction of new or more efficient condominium units in the affordable price range is another method. Still another way is the conservation of the City's existing quality single family stock particularly that located east of the Alameda. The City staff is directed to encourage developers of new multiple family projects to make provision for this special needs group.
- D. Encouragement of modular condominium projects - Modular condominium projects are those designed for flexibility from a marketing and consumer standpoint. Buildings could be designed with a particular unit size capable of being used as a studio or efficiency unit. Construction prior to sale would involve primarily the building shell. Consumers could buy as many units or modules as they desire and then design the modules to fit their needs. For example, a purchaser could combine two modules into a one bedroom apartment or three modules into a two bedroom apartment. In this way the building can accommodate changes in market conditions and units can be designed with or without certain amenities to help reduce costs. Parking would be provided on the basis of gross floor area within the building.
- E. "No-frills" housing - Since World War II, Americans have become accustomed to various amenities within a home. In recent years, such amenities have become overly expensive and sometimes wasteful. Modern design and material usage can substantially reduce building costs while maintaining the aesthetic quality of the home. To eliminate such costs, the "no frills" home has become a viable housing alternative. No frill homes offer the new homeowner an opportunity to add amenities to a home over time as the homeowner is able to afford them. The City of San Carlos supports the development of no frills housing, particularly in those areas where more affordable housing is needed. In general, no frills housing would be appropriate in the multi-family areas and generally close to transportation, jobs and shopping.

- F. Housing Revenue Bond Program - San Carlos participates with San Mateo County in its housing revenue bond program. That program provides below market rate interest loans to sponsors of low and moderate income housing at various locations in the County. The City has adopted a resolution of participation with San Mateo County. Project sponsors may submit proposals to the County Department of Housing and Community Development for review and approval. Commitments are issued on a competitive basis.

- G. Second Housing Units - This program involves the legalization of second housing units when made an integral part of a single family residence. In San Carlos, a second unit is defined as an attached living unit that provides complete, independent living facilities for one or more persons. It includes provisions for living, sleeping, cooking and sanitation within the main residence. The City will amend its Zoning Ordinance to provide that second units may be permitted upon the issuance of a Conditional Use Permit providing the unit meets specific standards. Those will include:
- a. Any structural alterations made to create a second unit must comply with current building, fire and zoning code regulations.
 - b. No more than 1.0 persons per room (exclusive of bathrooms and closets) may occupy the structure.
 - c. Additional off-street parking on the site shall be provided on the basis of one space for each bedroom in the second dwelling unit.
 - d. The exterior of the structure shall maintain the appearance of a single family residence.
 - e. The second unit shall not contain an area in excess of 640 square feet.
 - f. The structure containing a second unit complies with current zoning regulations.

Resource Commitment

- A. Shared housing - The City will provide limited office space and telephone for one to two days per week for a non-profit corporation worker to be in the community to work with those who need housing or have space available. Staff time, as well as Commission and Council review will be required to write and adopt a formal resolution. The City will contribute funds be used in advertising and publication of information about the program in the community.
- B. Mixed land use districts - Staff time, as well as Commission and Council review will be required to write and adopt a Zoning Ordinance amendment and standards. Staff review of proposals will be required.
- C. Special needs groups, modular condominiums and no frills housing - Staff time working with developers supporting these concepts in housing projects will be required. Planning Commission and Council review will be required to encourage the development of these concepts.

- D. Second Housing Units - Staff time, as well as Commission and Council review will be required to write and adopt a Zoning Ordinance amendment and standards. Staff and Commission review of conditional use permits will be required.

Estimated Results

It is anticipated that the shared housing program will result in the creation of 150 to 200 new available housing units in the existing homes and the placement of an equal number of individuals needing housing over the next five years. It is estimated that 100 percent of those individuals placed will be in the moderate, low and very low income ranges.

Implementation of the mixed land use district may result in the completion of one or two projects within the next five years. Results are undeterminable for this group as well as for provision of housing for special needs groups, modular condominium projects and no frills housing.

It is anticipated that the Second Unit Housing Program will result in the creation of approximately 50 to 100 new available housing units during the next five years. It is estimated that 100 percent of the occupants of second units will have incomes in the low and moderate ranges.

PROJECTED PROGRAM RESULTS

PROGRAM	1980-85	ESTIMATED RESULTS	
	ABOVE MODERATE	MODERATE	LOW & VERY LOW
New Housing Construction			
Single Family	240		
Multiple Family*	175	90	65
Shared Housing			150
Second Units			75
	415	90	290

Address and Remove Governmental Constraints

Statutory Requirements. The California Government Code requires that a community address and, where appropriate and legally possible, remove governmental restraints to the maintenance, improvement and development of housing.

Description of Programs

- A. Planning process priority - The length of the permit approval process is an extremely expensive component of overall housing costs. Although a system of priority permit processing would eliminate some of the time delays in the development approval process, much of the time commitment

* Multiple family dwelling is projected to occur on parcels currently developed with older single family residences. Projections are based on historic building permit data.

is mandated at the state level. Public notification requirements and other procedural requirements would be difficult to reduce or eliminate. One specific state requirement, often consuming a significant amount of valuable time, is the environmental review process. As outlined by the California Environmental Quality Act, many proposals necessitate an Environmental Impact Report requiring from six to twelve months to complete. One method of shortening this time for larger areas such as in the multi-family area would be the production of a master EIR. That master EIR could then be utilized in evaluating individual development proposals and save valuable processing time by simply paying the City for a portion of the EIR.

In general, San Carlos intends to institute a system of priority processing intended to hasten the approval of affordable housing developments. The City will also examine feasibility and desirability of writing a master EIR for various areas of the City which could accommodate affordable housing.

- B. Provide for mixed use in the Central District - This previously discussed program will provide housing opportunities in the Central District of San Carlos. The City staff will be instructed to encourage the development of more affordable housing within this area and coordinate this program with the Central Business District Plan.
- C. Reevaluate parking standards and requirements - The City will undertake a program to reevaluate its parking standards and requirements particularly as they relate to housing. Recent amendments to the Zoning Ordinance provide for the use of compact car spaces in commercial and industrial areas. Concepts such as compact car spaces and time-sharing of spaces may be appropriate in residential or mixed use districts.

Resource Commitment. Staff time would be required to institute a planning process priority system. Development of a Master EIR would most likely require funding by the City with reimbursement by developers in the future. Staff time, as well as Commission and Council review would be required to write and adopt Zoning Ordinance Amendments to provide for mixed use zoning districts and to reevaluate parking standards.

Estimated Results. Results of these efforts would help speed processing time and create greater opportunities for housing within San Carlos. The number of additional units resulting from these programs are included in the estimated results of the housing program entitled "Identification of Housing Sites to be Made Available".

Conserve and Improve Existing Affordable Housing Stock

Statutory requirements. The California Government Code requires that the Housing Element contain programs which address conservation and improvement of the condition of the existing affordable housing stock.

Description of Programs

- A. Limitation on condominium conversions - San Carlos has established a program of limitation on condominium conversions. Two basic standards must be met prior to permitting the conversion of a rental apartment to condominium: (1) the vacancy rate of the City's rental housing stock must be in excess of one percent and (2) the project must substantially meet existing codes and standards. This program is designed to conserve the City's existing affordable rental housing stock by preventing condominium conversions when replacement units are unavailable. In addition, when conversions are allowed, the building is required to be improved to current standards.
- B. Revise General Plan to decrease areas planned for conversion from single family to multi-family uses - The City's adopted General Plan specifies several areas of existing, quality single family homes for conversion to multi-family uses. This program involves the revision of the General Plan to remove the planned multiple family use designation from those areas where quality single family homes exist. In this way, the City would be supporting the conservation of its existing affordable housing stock.
- C. Work with local lending institutions to provide loans for property upgrading - The City intends to work with local banks, savings and loans and other lending institutions to encourage their provision of loans for property upgrading. Once cooperation is secured from these lending institutions, the City could then make known the availability of potential property improvement loans.
- D. Remodeling and improvement of existing units - Considerable remodeling and expansion of existing housing units within the

community has occurred over the past decade. This trend is expected to continue and provide San Carlos residents with a means of improving their housing opportunities without acquiring new housing. The action involves City encouragement of the remodeling and improvement of existing units. In this way the City will be acting to remove governmental constraints and will therefore increase affordable housing opportunities using current housing stock.

- E. Recommend and promote energy conservation in existing and new housing - This action involves City encouragement of energy conservation features in existing and new housing plans. City staff will be directed to recommend use of passive and active solar design features in the construction of new or remodeled housing. The City will maintain and distribute literature on passive and active solar design, insulation techniques, utility bill savings and tax advantages of energy conservation techniques.

Resource commitment. City staff will be required to conduct semi-annual vacancy rate surveys and to review proposals for condominium conversions when vacancies are in excess of one percent. In addition, City staff time will be required to work with local lending institutions to seek their assistance in providing loans for property upgrading. Planning and Building Department review of improvement and remodeling plans and energy conservation techniques will continue. Planning Commission and City Council time will be required to review General Plan revision proposals, condominium conversion requests and certain energy conservation proposals.

Estimated results. Based on past experience it is estimated that approximately 2,000 to 2,200 units will be remodeled and enhanced over the five year period between 1983-1988. It is predicted that most of the housing stock of San Carlos will continue to be preserved in a "well maintained" condition.

Although it is not possible to quantify the results of the various other programs, it is anticipated that the various efforts will have a substantial effect on conserving and improving the City's existing affordable housing stock. It is further estimated that a substantial portion of new and remodeled construction in San Carlos will have energy conservation features.

Promote Housing Opportunities for all Persons

Statutory requirements. The City's Housing Program shall promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin or color.

Description of Program

- A. Support of non-discrimination in housing - The City supports the concept of non-discrimination in housing. However, the City does not have the resources to actively promote or enforce non-discriminatory housing laws. Enforcement and remedy for those laws lie in civil and other remedies available to those persons who believe that discrimination has occurred. The Mid-Peninsula Citizens for Fair Housing Organization is a local resource agency available for the advocacy and enforcement of non-discriminatory housing laws.

Citizen Participation

Citizen involvement in the preparation of the San Carlos Housing Element was accomplished through a two-step process. Initially, through efforts of the San Mateo County Development Association Education and Research Foundation, Inc., a housing education workshop was held for the City Council and Planning Commission of San Carlos. At that workshop, Mr. Stephen Graham, Housing Coordinator for the San Mateo County Development Association, reported results of a community leader survey related to attitudes and desires about San Carlos housing needs. Representatives from the City of Martinez related their experiences with the provision of housing opportunities to the City Council and Planning Commission. Public members from various income groups including the elderly, participated in the workshop.

The second step of citizen involvement was accomplished through the normal process of Planning Commission and City Council hearings.

APPENDIX H-A

Population Characteristics

Population Trends. At the time of incorporation in 1925 there were only 600 people residing in San Carlos. Over the next three decades the City very rapidly expanded to 14,371 people, earning a reputation as "the West's fastest growing town."¹ After the 1960's, population growth slowed and eventually peaked at 26,053 in 1970. The 1980 census counted 24,710 people, a five percent decline from 1970.

TABLE HA-1 HISTORIC POPULATION TRENDS AND PROJECTIONS

YEAR	POPULATION	SOURCE
1925	600	Historic Publications*
1950	14,371	U.S. Census
1960	21,370	U.S. Census
1970	26,053	U.S. Census
1980	24,710	U.S. Census
1985	27,100	ABAG, Projections '83
1990	27,000	ABAG, Projections '83
1995	27,300	ABAG, Projections '83
2000	27,500	ABAG, Projections '83

* Mahany, Effie C. Through the years in San Carlos, privately printed by the San Mateo Times for the San Carlos Villagers, 1967.

The decline in population which took place in San Carlos over the last decade compares to a County-wide increase of 5.7 percent and an overall increase in the Bay Area of 8.9 percent.

The Census Areas and Population Map, Exhibit HA-1, shows the general distribution of the San Carlos population in 1970. Census data is aggregated according to census blocks. On the map, circles of various sizes are used to represent the population magnitude in a particular block. The symbols appear next to the block numbers.

¹ Stanger, Frank M., South from San Francisco, San Mateo County Historical Association, San Mateo, 1963.

TABLE HA-2 RECENT TRENDS IN LOCAL AND REGIONAL POPULATION

	San ¹ Carlos 1970	San ² Carlos 1980	San Mateo ¹ County 1970	San Mateo ² County 1980	Bay ^{1,3} Area 1970	Bay ^{2,3} Area 1980
Total Population	26,053	24,710	556,234	588,164	4,174,562	4,547,792

¹ U.S. Census, 1970

² U.S. Census, 1980

³ Includes only Alameda, Contra Costa, Marin, San Francisco, San Mateo, and Santa Clara Counties.

Age Characteristics. The most noticeable trend in age groups over the past decade, both in the City of San Carlos and in the County, has been an overall aging of the population. The percentage of infants under 5 and the number of children under 18 have decreased, while the percentage of people 18 to 64 and the percentage of seniors 65 and over has increased.

HA-3 AGE CHARACTERISTICS

Age Groups (Total Population)	San Carlos 1970		San Carlos 1980		San Mateo County 1970	San Mateo County 1980
	# of Persons	%	# of Persons	%	Percent	Percent
Persons						
Under 5	1,612	6.2	1,092	4.4	7.7	5.8
5-17	5,934	22.9	4,134	16.7	24.3	17.9
18-64	15,968	61.6	16,044	65.0	60.3	65.9
Persons 65 and over	2,410	9.3	3,440	13.9	7.7	10.4
TOTAL	25,924	100.0	24,710	100.0	100.0	100.0

In 1980 the senior citizen residences in San Carlos were fairly evenly distributed throughout the community. Census Tract 6092 had a higher percentage of seniors than any other tract, and in three of the six block groups

within that tract, the percentage of senior households ranged between 27 to 40 percent of the total households. On the other hand, Tracts 6095 and 6096 had the lowest percentage of senior households.

TABLE HA-4 LOCATION OF THE ELDERLY

<u>Census Tract</u>	<u>Overall Percentage of Seniors in the Total Population</u>
6091	12%
6092	23
6093	19
6094	14
6095	8
6096	7

Ethnic and Racial Characteristics. Over the past decade the proportion of black and other racial groups has increased slightly in San Carlos. This increase in racial mix is not comparable to the County pattern, however, as shown in Table HA-5.

TABLE HA-5 RACIAL CHARACTERISTICS

Racial (% Total Population)	San Carlos ¹ 1970	San Carlos ² 1980	San ¹ Mateo Co. 1970	San ² Mateo Co. 1980
White	98.6	95.1	91.3	79.3
Black	0.2	0.5	4.7	6.1
Other	1.2	4.4	4.0	14.6

¹ 1970 U.S. Census

² 1980 U.S. Census

In 1980 there were 1293 people of Spanish origin residing in San Carlos, or 5.2 percent of the total population. This compares to a total of 1115 persons of Hispanic background counted in the 1970 Census, or 4.3 percent.

Employment Characteristics

Employment Pattern. Employment patterns have shifted somewhat since 1970. The unemployment rate was about the same for women (2.6 percent) as men (2.1 percent). The percentage of the female population (over age 16) belonging to the labor force increased substantially from 45 percent in 1970 to 58 percent in 1980. The percentage of male population belonging to the labor force remained at a constant 81 percent in both 1970 and 1980. This compares to the Countywide figure of 81 percent of the male population belonging to the labor force and 59 percent of the female population included in the labor force.

TABLE HA-6 EMPLOYMENT PICTURE

	Persons 16 Yrs. Old and Over		Number in Labor Force		Number Employed		Number Unemployed		Percent Unemployed	
	1970 ¹	1980 ²	1970 ¹	1980 ²	1970 ¹	1980 ²	1970 ¹	1980 ²	1970 ¹	1980 ²
Males	9175	9692	7731	7858	7417	7693	303	165	3.9	2.1
Females	10291	10687	4637	6216	4398	6050	239	166	5.2	2.6

¹ U.S. Census 1970

² U.S. Census 1980

Type and Location of Employment. The most frequent occupation types given by San Carlos residents in 1980 were professional, managerial, and clerical jobs. The second most significant were craft, sales and service positions. Other relatively frequently mentioned professions included service and and operative workers.

TABLE HA-7 EMPLOYMENT BY OCCUPATION

Occupation Type	1970 ¹ Number Employed	1980 ² Number Employed	1970 ¹ Percent Citywide	1980 ² Percent Citywide
Professionals	2,459	2,461	20.8	17.9
Managers	1,677	2,490	14.2	18.0
Sales Workers	1,339	1,887	11.3	13.7
Clerical	2,663	3,017	22.5	22.0
Craftsmen	1,401	1,521	11.9	11.1
Operatives (except Transport)	883	408	7.5	3.0
Transport Equipment Operatives	294	246	2.5	1.8
Laborers (Except Farm)	221	370	1.9	2.7
Farm Laborers	9	86	0.0	0.6
Service Workers	803	1,205	6.8	8.8
Private Household Workers	<u>66</u>	<u>52</u>	<u>0.6</u>	0.4
TOTAL	11,815	13,743	100.0	100.0

¹ U.S. Census 1970

² U.S. Census 1980 (Categories modified in 1980)

TABLE HA-8 PLACE OF WORK FOR SAN CARLOS RESIDENTS

<u>PLACE WHERE EMPLOYED</u>	<u>1980 PERCENT OF WORKERS WHO REPORTED</u>
San Carlos	23.7
San Francisco Oakland	11.7
Elsewhere in San Mateo County	51.0
Outside San Mateo County	13.6

Although 1970 and 1980 census statistics are not precisely comparable, there appears to be a trend for San Carlos residents to work closer to home. The number of San Carlos working in San Francisco-Oakland decreased by about 4 percent during the decade.

Population and Employment Projections

According to the Association of Bay Area Governments (ABAG) publication Projections '83, the population of San Carlos is likely to increase gradually to the year 2000.

ABAG further projected that employment opportunities in San Carlos will steadily increase to the year 1995 with a slight decrease between 1995 and 2000. The average five year growth rate is estimated to be 54 percent or an increase of 950 jobs every five years between 1985 and 1995. The employment rate is then projected to decline by -.5 percent (100 jobs) between 1995 and 2000.

TABLE HA-9 LOCAL EMPLOYMENT PROJECTIONS

Year	Total Employment	Incremental Growth	Percent Growth
1980	16,663		
1985	17,200	537	3.2
1990	18,400	1200	6.9
1995	19,100	700	3.8
2000	19,100	100	(.5)

Source: Projections '83, Association of Bay Area Governments, June 1983.

Housing and Household Characteristics

Housing Units and Mix. A total of 10,340 housing units were counted in San Carlos during the 1980 Federal Census, 1091 units more than in 1970. The Census figures further revealed that the household size declined in 1980 to 2.42 persons per dwelling unit, from 2.88 persons per unit in 1970.

The proportion of single and multiple family units made only a slight change during the decade, with a 1.6 percent increase in the number of multi-family dwelling units compared to single family dwelling units.

TABLE HA-10 NUMBER OF UNITS, TYPE OF UNITS AND HOUSEHOLD SIZE

Year	All Units	Percent Single Family	Percent Multi-Family	Percent Vacant	Population Per Occupied Unit	Total Population
1970	9,259	80.0	20.0	2.4	2.88	26,053
1980	10,350	78.4	21.6	1.7	2.42	24,710

Group quarter facilities occurred in San Carlos in all Census Tracts in 1970 and 1980.

Housing Condition. The median age of residential structures in San Carlos is between 30 and 40 years old. There has historically been an irregular rate of housing construction, with the most significant growth period occurring in the 1950's when nearly one-third of the current housing supply in San Carlos was built. Recently the rate has slowed considerably, as it has everywhere in the Bay Area.

A windshield survey of housing conditions was conducted in census tract 6091 and 6092 in February 1983. It was determined that less than 1 percent of the residential structures surveyed were in need of some form of rehabilitation. It is presumed that the condition of the entire city housing stock is similar to that of the surveyed tracts.

TABLE HA-11 AGE OF HOUSING UNITS¹

Year Structure Built	After 1969	1960-1969	1950-1959	1940-1940	1939 or earlier
Percent of Total Units	11.3	20.2	30.1	27.9	10.5

¹ Based on 1970 and 1980 Census data.

Housing Tenure. The 1980 Census indicates that just over one-third of the housing units in San Carlos were occupied by their "current" residents for over ten years. The long term residency in San Carlos is likely related to the high proportion of ownership units in the City. Census data from 1980 indicated a breakdown of 71 percent ownership to 29 percent renter occupied.

TABLE HA-12 HOUSING TENURE, 1980

Years at Present Address-March	1970- March, 1980	1970- 1978	1960- 1969	1950- 1959	1949 and Prior
Percent of Total Units	18.8	45.7	19.3	10.5	5.7

Household Size

Exhibit HA-1 of this plan element appendix indicates the number of people who live in each census tract block and presents a graphic representation of population density and housing unit distribution. The median household size for all residential units in San Carlos was 2.43 in 1980, according to the Census. A comparison of this figure with that from 1970 shows that the population per dwelling unit has declined in San Carlos by nearly one-half person per unit. The City-wide decline compares to a County decline from 2.9 persons per unit in 1970 to 2.5 persons per unit in 1980.

A total of 198 units in San Carlos contained more than 1.01 or more persons per room in 1970, according to Census tables. The distribution or general location of these units can be obtained by using the following table and referring back to Exhibit HA-1, the Census Area and Population Map.

TABLE HA-13 OVERCROWDING

Census Tract	Number of Overcrowded Units in the Block (Blocks are identified by Block Number)						
	1	2	3	4	5	6	8
6091	201, 405 302 303	110 403 404	301 305 406	205	203 206	204 407	-
6092	105, 109, 110, 112, 116, 119, 202, 204, 205, 207, 212, 217, 306, 404, 405, 406, 408, 511, 513, 602, 605, 609, 610, 616	113 118 506 601	106 510	403	-	117	-
6093	107, 108, 110, 113, 215, 218, 220	204	105	-	-	-	-
6094	103, 108, 112 115, 122, 124 125	107 114 117 128	120	127	-	-	-
6095	114 122 124	107 119 126	123	-	121	218	-
6096	102, 106, 205 206, 210	105 208 301 308	104 201 207 312 313	-	-	-	-

* Census definition of overcrowding is 1.01 persons per room.

Building Permit Activity. The following table summarizes the building permit history in San Carlos from 1971 to the present. Information was collected directly from City records.

TABLE HA-14 BUILDING PERMIT HISTORY

Year	New Dwelling Units				Alterations	
	Single Family Homes	Condominiums # of Units	# of Bldgs.	Apartments # of Units	# of Bldgs.	
Thru 1982 March	9	-	-	-	-	60
1981	36	39	6	-	-	358
1980	34	73	2	-	-	430
1979	88	188	76	-	-	500
1978	28	28	3	8	1	549
1977	78	-	-	56	7	481
1976	90	-	-	14	2	517
1975	57	32	2	11	2	489
1974	82	40	5	-	-	475
1973	95	84	7	26	2	429
1972	68	90	6	165	13	148
1971	42	-	-	111	8	-

Household Income and Housing Cost. Calculations of the maximum amounts that various income groups can afford to pay for housing was based on the median "household" income for San Mateo County. This is slightly different than the median "family" income used by HUD in determining eligibility for housing assistance. However, it is felt that the "household" figure is more representative of the median income levels actually existing throughout the County. The income groups and 1980 annual gross income figures HA-15 were derived using the accepted definitions related to a percentage of median income: very low = 50 percent, low = 80 percent, moderate = 120 percent and above moderate = greater than 120 percent. Housing affordability was calculated

at 30 percent of monthly income for renters and 0.95 percent of three times annual income plus taxes for owners.

Household incomes for San Carlos residents during 1979 are presented on Table HA-16. Almost 45 percent of the households had incomes in the above moderate category and slightly less than 55 percent had incomes in the low and moderate category.

Table HA-17 contains comparative information about income groups and units affordable to that group in 1980. The number of households in each income group is compared to the number of housing units that were existing and affordable to that group. For example, there were 1,740 households in San Carlos in 1980 that had incomes in the very low category. During that same year there were 392 renter occupied and 4,023 owner occupied units in the City providing housing at costs affordable to that income group. It is not possible to determine if the lower income households were actually occupying the lower cost units. Also the high proportion of owner-occupied units with low monthly mortgage costs indicate that many people have owned their homes for a long time and have correspondingly low or no mortgage payments. However, this does indicate a substantial supply of housing available for households of low and moderate incomes.

TABLE HA-15 MAXIMUM AFFORDABLE HOUSING COSTS BY INCOME GROUP

INCOME GROUP	1980 GROSS INCOME		MAXIMUM AFFORDABLE HOUSING COST	
	ANNUAL	MONTHLY	RENTER	OWNER*
Very Low	11,560	964	230	400
Low	18,500	1,542	460	650
Moderate	27,750	2,315	690	1,000
Above Mod.	27,750+	2,315+	690+	1,000+
Median	23,125 Household			

* Monthly Mortgage = 0.95% of house value

TABLE HA-16 HOUSEHOLD INCOME IN 1979

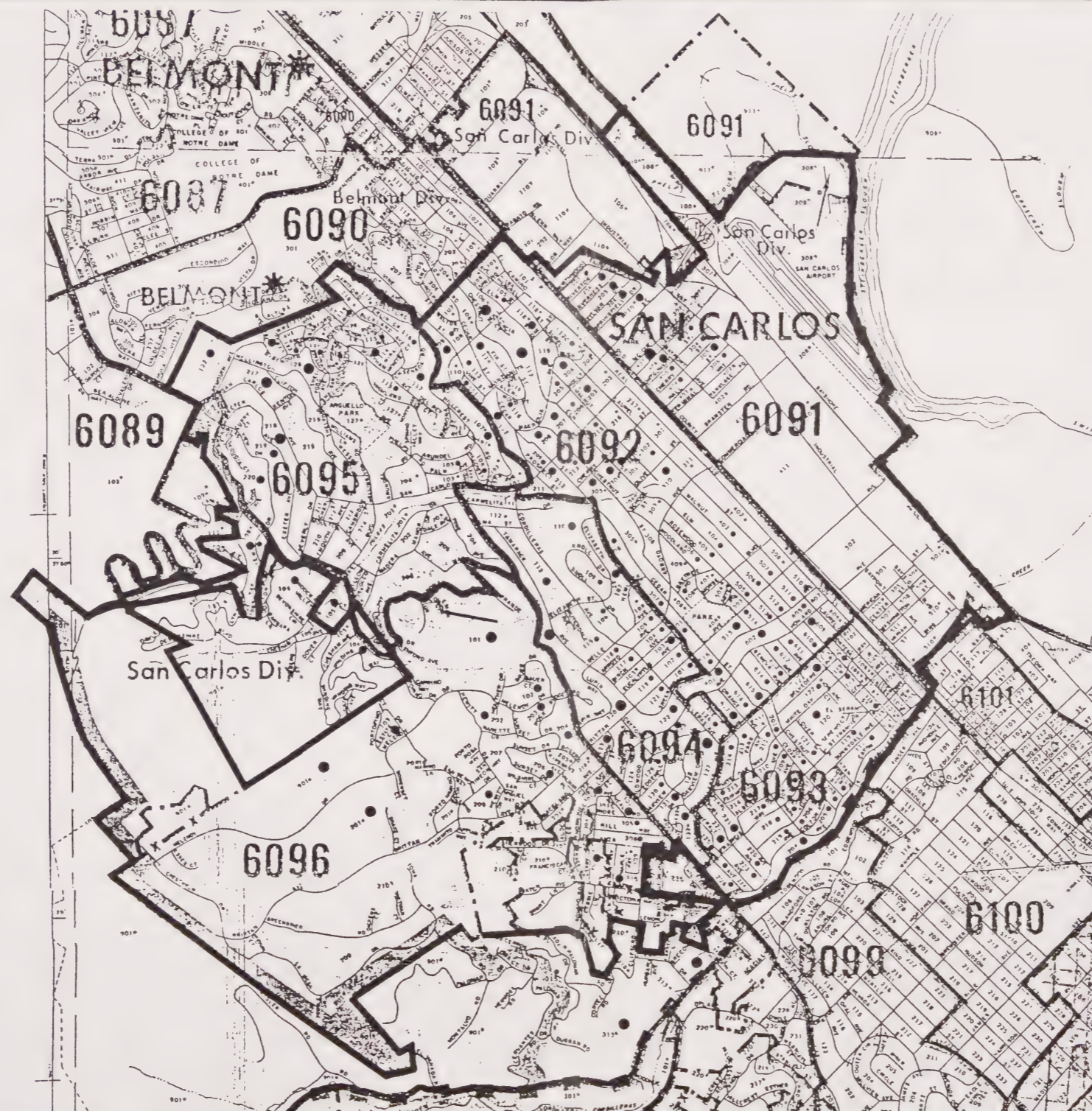
INCOME CATEGORY	INCOME IN 1979	NUMBER OF HOUSEHOLDS	PERCENT OF TOTAL
Very Low	\$ <5,000	440	4.4%
	5,000- 9,999	915	9.1
	10,000-11,560	385	3.8
Low	11,561-14,999	782	7.8
	15,000-18,500	835	8.3
	18,501-19,999	328	3.3
Moderate	20,000-24,999	1,271	12.6
	24,999-27,750	601	6.0
	27,751-29,999	565	5.6
Above Moderate	30,000-34,999	918	9.1
	35,000-39,999	842	8.4
	40,000-49,999	1,004	10.0
	50,000-74,999	861	8.6
	75,000+	306	3.0
Total		10,053	100.0%

TABLE HA-17 INCOME/COST CORRELATION

NUMBER OF HOUSEHOLDS WITH INCOMES IN SPECIFIED CATEGORIES			NUMBER OF HOUSING UNITS EXISTING IN 1980 AND AFFORDABLE BY SPECIFIED INCOME GROUP		
			RENT-OCC.	OWN.-OCC.	TOTAL
Very Low	1,740	17.3%)	392	4,023	4,415
Low	1,617	16.1) 55.3	1,696	1,330	3,026
Moderate	2,200	21.9)	852	1,830	2,682
Above Moderate	4,496	44.7			
Total	10,053	100.0%	2,940	7,183	10,123
Median Rent			355		
Median Value of Owner Occupied Unit			151,303		
Median Household Income			25,293		
Number of Households Below Poverty Level			302		

TABLE HA-18 PLANNING AND BUILDING FEES

<u>PERMIT</u>	<u>FEE</u>
Zoning Clearance	\$20
Conditional Use Permit	55
Variance	110
Rezoning	165
Subdivision Tentative Map	110
Building Permits	
Minimum Valuation	10
\$500 - \$200,000 Valuation	\$10-\$683
Over \$200,00 Valuation	\$2.50/\$1000 Valuation
Plan Checking	65% of Building Permit Fee



HA-19

CENSUS AREAS AND POPULATION

0 2000
Scale in Feet

TOTAL POPULATION (1970)

- 10 to 50
- 51 to 100
- 101 to 200
- Over 200

**OPEN SPACE AND
CONSERVATION ELEMENT**

OPEN SPACE AND CONSERVATION ELEMENT

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OPEN SPACE AND CONSERVATION ELEMENT

Purpose and Content

In order to eliminate duplication, the Conservation and Open Space Elements of the San Carlos General Plan have been consolidated here into a single document, a procedure authorized by Government Code Section 65301 and 65302. The intent of the Conservation Element is to describe the natural and non-renewable or scarce resources of San Carlos and to identify appropriate methods for protecting, conserving, maintaining and/or using those resources. The purpose of the Open Space Element is to inventory privately and publicly owned open spaces, and to identify measures for preserving, conserving and managing open space. Programs and policies outlined in both elements are to be coordinated with State and Regional open space and conservation programs.

This element will first provide an inventory of open space lands in San Carlos. The categories of open space which will be discussed are those intended for the preservation of natural resources, open space for the managed production of resources, open space for outdoor recreation, and open space for public health and safety.

Natural resources will also be inventoried, including streams, wildlife habitat and vegetation communities. There are no recognized or remaining forests, agricultural lands, mineral resources, fisheries, or shoreline resources within the city limits or the sphere of influence boundaries of San Carlos. Flood control and soil resources have been adequately addressed and mapped in the Seismic Safety Element. In most cases, the natural resources mapped in San Carlos coincide geographically with the areas delineated as open space in the Land Use Element and in the accompanying Park, Open Space and Vacant Land, Exhibit OSC-1.

Finally, anthropologic, archaeologic, and historic resources will be described in this element. Air, water and energy resources will also be discussed in terms of conservation and monitoring.

Relation to Other Elements, Previous Elements and Amendments

Because the Conservation and Open Space Elements are so closely related, they are treated here in combination. They also relate closely to the Land Use, Seismic Safety, Safety, and Scenic Highways Elements. A previous Open Space Element was prepared by the City of San Carlos, and adopted by the City Council as Resolution 1978-15. A previous Conservation Element, prepared by Hahn, Wise and Associates, Inc., was adopted under Resolution 1973-71. The consolidated elements presented in this document have been updated, their format has been revised and

their style has been made consistent with the other 1982 General Plan Elements.

Conservation, Open Space and the General Plan

San Carlos is a community which is approximately fully developed. A major portion of the open space acreage remaining in San Carlos has previously been acquired by the City for the purposes of public safety, protecting wildlife, enhancing aesthetic amenities and providing public access to recreational lands.

The majority of open space lands are located on the slopes and ridges of the western foothills and are primarily subclimax natural vegetation communities or replanted hillsides. Like much of California's natural vegetation, the local foothill communities of San Carlos are not considered climax (i.e., final, self-perpetuating communities) because at intervals they are likely to be disturbed by man-caused or natural fires. These promontory features provide a scenic backdrop for the surrounding suburban neighborhoods and can be viewed from points and thoroughfares throughout the community.

In addition to open space areas within the City boundary, significant expanses of unincorporated open space lie adjacent to the City and within the San Carlos sphere-of-influence. These open lands are largely made-up of three parcels, all of which lie adjacent to the San Francisco Watershed property. One is the Benedetti property; another is the property of and surrounding the Hassler Health Home, and the third is the right-of-way for the Hetch-Hetchy Aqueduct. One of the three parcels is currently reserved as permanent open space by virtue of its land use.

A very significant expanse of open space lies east of and adjacent to the City Airport, but outside the City's sphere-of-influence. The Bayfront intertidal zone, containing areas of salt marsh, mud flats, and sloughs is of regional ecological importance. While San Carlos does not have jurisdiction over this area, the streams that serve as drainage channels for the community empty into the intertidal zone. Impacts to the San Carlos waterways would directly and indirectly affect adjacent Bayfront biotic resources.

Another significant open space area lies just west of the City's sphere-of-influence boundary. The San Francisco Watershed property covers a 35-square mile region which was set aside and dedicated as permanent open space in connection with the Interstate 280 scenic highway and corridor agreement with the Federal government.

The Watershed habitat is unique in that substantial areas within it have remained virtually undisturbed by modern man. Included in the entire Watershed are two biotic provinces, five plant communities, and approximately 600 plant species, several of which are rare or endangered. Rare serpentine soils and their associated botanic resources are also found on the Watershed lands. The San Mateo County Conservation Element has described this area as a special habitat with unique qualities, identified for preservation purposes and classified as an ecological and scientific study area.

Regional Outdoor Recreation Amenities

San Carlos is located on the San Francisco Peninsula within close proximity of the San Francisco Bay and with regional access to the Pacific Ocean. The Santa Cruz Mountains, a branch of the Pacific Coast Range, run from north to south just west of the City. These mountains cover 55 percent of the total area of San Mateo County, their average elevation is 1,200 feet, and they are predominantly undeveloped. Although the following description is not a complete inventory of regional open space and recreational amenities, it provides an overview of the types of outstanding scenic and natural outdoor recreation opportunities which are readily available to San Carlos citizens.

San Mateo County maintains a system of park and recreation areas comprised of twenty facilities. One of the larger facilities is the 974-acre Huddart Park, located four miles south of San Carlos. Other regional facilities include two National Wildlife Refuges, one of which encompasses the lands surrounding the Crystal Springs Reservoir, two miles northwest of San Carlos. The other, not yet open to the public, is comprised of 23,000 acres of marshes, mudflats, salt ponds and open water and is only two miles northeast of the City. Half Moon Bay State Beach is located approximately 20 miles west of San Carlos by way of Route 92 to the coastside, providing public access to the ocean.

The San Mateo County Scenic Roads system has three routes which run through or near San Carlos. Alameda de las Pulgas is a residential foothill roadway which provides panoramic urban and bay views from various vantage points. It also crosses a number of wooded creeks. Edgewood Drive was an early lumbering road through Cordilleras Creek Canyon. It runs from the Junipero Serra Freeway into San Carlos and provides views of the bay, wooded hillsides, the San Francisco Watershed, and the Santa Cruz Mountains. Junipero Serra Freeway (Interstate Route 280) is also included in the State

Master Plan for Scenic Highways and is designed to blend with the foothills of the peninsula, it's natural surroundings. Sweeping panoramic views of the bayside and San Francisco Watershed properties are visible from vista points, three of which are in close proximity to San Carlos.

Open Space Planning Factors

The open space categories which have been defined in the State requirements as most pertinent for community planning are discussed in the following paragraphs.

Open Space for Outdoor Recreation. In addition to the regional amenities previously outlined, the provision of City-owned recreation facilities in San Carlos has been directed toward serving neighborhoods and planned around the concept of joint use of City and School District properties. Park development has been traditionally based on a planning standard of providing four acres of recreational land per thousand population. The 1980 population of San Carlos was 24,710, therefore the total amount of recreation land which should be available according to City standards is almost 100 acres. As shown in Table OSC-1, the total acreage for existing and future parks in San Carlos is 49.4 acres. The additional recreational facilities which are available on school grounds cover 36.6 acres. In total, the City has 86 acres of recreational open space, 14 acres less than the City standard. Assuming the City's population reaches the projected 25,200 people by the year 2000, the calculated area needed for parks would be 100 acres. The location and area of City parks is mapped in the Parks, Open Space and Vacant Lands exhibit accompanying this plan element.

The 1978 Open Space Element referenced standards set by the Association of Bay Area Governments (ABAG) and defined criteria for local public and private open space acquisition and dedication goals. ABAG calls for the provision of 36 acres of local open space for every 1,000 population. Based on the 1980 population count, the amount of open space necessary under ABAG criteria would equal approximately 900 acres. In total, the City has acquired to date approximately 210 acres of park and open space land. An additional 40 acres within the City's sphere-of-influence are set aside as open space by virtue of their primary land use.

With the acquisition of the property surrounding the Hassler facility and the Benedetti property, the City could accumulate a total of approximately 623 acres. Remaining acreage for meeting the

TABLE OSC-1: PARK AND OPEN SPACE INVENTORY

<u>Map Symbol</u>	<u>Park Name</u>	<u>Acreage</u>	<u>Designation</u>
<u>Parks</u>			
1	Laureola Park	1.8	Neighborhood
2	City Hall Park	1.0	Neighborhood
3	Magnolia Park	0.2	Neighborhood
4	Cedar Street Park	0.9	Neighborhood
5	Burton Park	10.2	Community
6	Hillcrest Circle Park	0.5	Neighborhood
7	Arguello Park	16.8	Community
8	Alameda Park	0.2	Neighborhood
9	San Carlos Avenue Park	0.2	Neighborhood
10	Heather Park	2.1	Neighborhood
11	Crestview Park	7.0	Neighborhood
12	North Crestview Parksit	8.0	Future Neighborhood
13	Vista Point Parksit	0.5	Future Neighborhood
		<u>49.4</u>	
<u>School Sites</u>			
<u>School Sites</u>	<u>School Name</u>	<u>Recreation Acreage</u>	<u>Designation</u>
14	San Carlos	13.5	High School (Closed)
15	Central	4.0	Intermediate School
16	Tierra Linda	8.1	Intermediate School (Closed)
17	Arundel	1.5	Elementary School
18	Brittan Acres	3.8	Elementary School
19	Heather	3.4	Elementary School
20	Laureolla	0.8	Elementary School (Closed)
21	White Oaks	1.5	Elementary School
		<u>36.6</u>	
<u>Open Space</u>			
<u>Open Space</u>	<u>Name</u>	<u>Acreage</u>	<u>Owner</u>
A	Big Canyon Park	16.1	City of San Carlos
B	Chilton Park	1.1	City of San Carlos
C	Picadilly Ct.	28.5	Private (with dedicated open space easement)
D	Portino Marino/Drake Ct.	32.0	City of San Carlos
E	Leslie Dr.	2.4	City of San Carlos

TABLE OSC-1: PARK AND OPEN SPACE INVENTORY (continued)

<u>Open Space</u>	<u>Name</u>	<u>Acreage</u>	<u>Owner</u>
F	Upper Brittan	3.0	City of San Carlos
G	Greenbriar/Dickson Ct.	40.0	City of San Carlos
H	La Mesa	4.0	City of San Carlos
I	Pebble Drive	2.5	City of San Carlos
J	Bow Drive	2.5	City of San Carlos
K	Leonella Park	27.9	City of San Carlos
		<u>160.0</u>	
L	Benedetti	80	Benedetti
M	Hetch-Hetchy Aqueduct Corridor	40	San Francisco
N	Hassler Health Home Property	293	San Francisco
		<u>413</u>	

ABAG criteria could be acquired in the following ways: 1) portions of the Pulgas Creek Watershed, general planned for residential development could be set aside as open space as conditions of project approval; and/or 2) the City's open space planning area could be extended on the west side of Route 280.

A more immediate goal stated in the previous Open Space Element was the acquisition of open space easements and recreational development rights for the three significant open space parcels which lie within the City's sphere-of-influence, now designated in the General Plan for Open Space. These parcels are:

1. Hassler Health Home. The lands surrounding the City and County of San Francisco's facility are naturally wooded and contain similar biotic resources to those of the Benedetti property, to which they are adjacent. The Open Space Element for the County of San Mateo includes the Hassler Health Home site as a potential regional park for the communities of San Carlos and Redwood City.
2. The Benedetti Property. The 80 acre undeveloped site was the subject of a 1982 Draft Environmental Impact Report which contained a biotic survey.¹ Lists of representative plant and animal species can be referred to in that document, included here by citation. In summary, the vegetation on the property includes several communities: grassland, oak-bay woodland, Douglas fir forest, riparian woodland, chaparral and coastal scrub. A diversity of wildlife species were sited on the property, and habitat for many others was identified in the DEIR.
3. The Hetch-Hetchy Right-of-Way. A 40-acre portion of the right-of-way for the San Francisco Aqueduct lies on the southern border of the City's Sphere of Influence. The right-of-way contains similar biotic resources to the Hassler Health Home Properties, from which it forms an extension. It is owned by the San Francisco Water Department and cannot be developed, except in connection with the aqueduct. This open space area adds considerably to the scenic view quality of Edgewood Drive.

¹ Larry Seeman Associates, Inc., Draft EIR, Annexation and Development Lands of Benedetti prepared for the City of San Carlos, July, 1982.

Open Space for the Preservation of Natural Resources. There are three primary types of biotic habitat which are present in San Carlos. They are delineated on the Archaeologic, Historic, and Natural Resource Inventory, Exhibit OSC-2, and include Riparian Zones, Oakwoodland/Grassland, and Ruderal habitats. Also shown on the exhibit are the biotic communities which exist along the nearby shoreline, but outside the San Carlos planning area. The shoreline and intertidal map information was referenced from a report co-sponsored by the U.S. Fish and Wildlife Service and the California Department of Fish and Game.²

Species lists containing representative plants and animals for the habitats shown can be found in the Conservation and Open Space Element of the General Plan, San Mateo County, 1973, included here by reference.³ Species lists including several rare and endangered species, and descriptions of shoreline habitats, are included in the Jones and Stokes report.

1. Riparian Zone. There are three intermittent streams which serve as drainageways through the City: Pulgas, Brittan and Cordilleras Creeks. Riparian habitat is perhaps the most highly significant of any biotic community remaining in San Carlos, in terms of wildlife values. Vegetation along streams is usually a more dense representation of plant material found in the surrounding plant classification, and on occasion there are occurrences of species specific to riparian zones, i.e., Box Elder, Big Leaf Maple, and Willow. Riparian habitats, because they are uncleared and undeveloped even in their urban-most extensions, support an abundance of wildlife. Soils are rich, water is available, temperatures and wind are moderated and cover is plentiful in riparian zones. Wildlife nesting and feeding sites are common.
2. Oakwoodland and Grassland Community. This community covers the ridgetops, upper slopes and steep canyons of the western hills. From an aesthetic standpoint, this community and its associated geomorphic formations are the most visible and

² Jones and Stokes Associates, Inc., et al., Protection and Restoration of San Francisco Bay Fish and Wildlife Habitat, Volume II, prepared for U.S. Fish and Wildlife Service and State Department of Fish and Game, August, 1979.

³ Open Space and Conservation Element, San Mateo County General Plan, December, 1973.

prominent natural features in San Carlos. Growth of vegetation is typified by trees of 15 to 30 feet in height in open groves, interspersed with brush and grassland. Typical oak woodland species include: Quercus agrifolia (Live Oak); Aesculus californica (Buckeye); Umbellularia californica (California Laurel); and Heteromeles arbutifolia (Toyon).

Species likely to occur in the interspersed grassland zones are: Allium sp. (Wild Onion), Avena Fatua (Wild Oats), Bromus sp. (Brome grasses), Festuca sp. (Fescue), Melica californica (Western Melica), Oenothera Orata (Suncups), Sisyrinchium bellum (California Blue-eyed grass), and Stipa pulchra (Nodding Stipa).

3. Ruderal Areas. The ruderal areas of San Carlos are disturbed sites upon which a variety of weedy, invasion-prone species are established. Prominent among forty or fifty different common weeds are brome grasses, wild radish, thistles, dock, and fennel. Ruderal areas are often in a state of flux. They exhibit temporary wildlife values and serve as food and cover for a variety of insects, reptiles, small mammals, songbirds and raptors.

Open Space for the Managed Production of Resources. There are no agricultural or rangelands remaining in San Carlos. Nor are there timber reserves or acreage suitable for silviculture. Mineral resources on the City's western boundary have been extracted to their appropriate level and operations at Edgewood Quarry ceased in the 1970's due to geotechnical concerns and reclamation constraints. Further gravel extraction and production in this area is not foreseen to occur.

The slough and marsh area along the shoreline east of the City boundary are very important ecosystems for the production of fish and shellfish in the San Francisco Bay. While this area is not within the City's jurisdiction, the amount and quality of storm runoff which empties into the intertidal zone can create impacts, therefore considerate planning is in order. To avoid water quality impacts, the riparian areas should be retained as open space and left undisturbed.

Open Space for Public Health and Safety. The streams which traverse San Carlos function as natural and improved drainage channels, carrying

storm run-off from the upper reaches of the drainage basin to the San Francisco Bay. During times of peak runoff, portions of lands adjacent to the creeks are subject to flooding. These areas have been mapped and are exhibited in the Seismic Safety Element.

Vegetation along the waterways is an important component in the dynamic processes of stream morphology. When vegetation is removed along waterways, changes in the course and floodplain are more likely to occur. In order to avoid either impacts to public safety or costs of channel improvement, it is important that the riparian zones be retained as natural, open space areas.

Geotechnical and seismic hazards and development constraints have been mapped and described in the Seismic Safety Element. Development standards are outlined in that plan element for steep hillsides, fault trace areas, areas subject to erosion flooding and earthquake hazard areas.

Open Space land surrounding the San Carlos Airport is vital for public safety. Aviation requirements for clear zones surrounding all airports must be enforced and maintained in community planning. Land uses, height limits and clear zones in the vicinity of the airport are established in the San Mateo County Airport Land Use Plan. The standards established in that plan are enforced by the San Mateo County Airport Land Use Commission.

Archaeologic and Historic Resources

Background Information. Very little published archaeologic data exists for San Mateo County.

M. J. Moratti synopsized the most recent investigations in his contribution to the Treganza Anthropology Museum Papers published by San Francisco State College.⁴ In 1971 Moratti concluded that there was insufficient data collected through the years to formulate even a preliminary assessment of San Mateo County prehistory. One factor contributing to the lack of information is that the majority of potential archaeologic sites in San Carlos and elsewhere in the County have long been removed, destroyed, disturbed, obscured or otherwise made unavailable to investigation through land use commitment.

Until recently, regional studies had been based primarily on the excavation of 425 separate accumulations of shell mounds distributed throughout the San Francisco Bay Area. These remains have allowed archaeologists to make some general assertions regarding the population and cultural characteristics of people who inhabited the wider area before European contact. The native Americans, referred to in most ethnographic literature as Coastanoans (from the Spanish "Costanos," meaning "People of the Coast"), were ecologically classified as Tideland Gatherers.⁵ They relied heavily on shellfish and surf fish, and supplemented their diets with such items as acorns and game. They significantly modified and managed California coastal vegetation by using fire to repeatedly burn-off large areas of their hunting and gathering range. This created a successional grassland environment, and enhanced their own vegetable food sources while creating improved forage for hunted game.⁶

Marsh vegetation species, in particular reeds and tules, were used to construct rafts, to cover pole houses, and for making baskets and clothing. The excavated shell mounds were found to consist mainly of mussel shells. It is believed that throughout prehistory the Coastal Indians exported shellfish to interior tribes. The mounds are

⁴ Moratti, M. J. ed. "Contributions to the Archeology of San Mateo County," Traganza Anthropology Museum Papers (1971) Volume 1, San Francisco State College.

⁵ Ibid

⁶ Kroeber, A. L. Handbook of the Indians of California (1925) Volume 1, Scholarly Press Inc., Michigan

dated to more than 3,000 years ago, but whether or not the Coastanoan tribes were present at that time is not known. Their introduction into the area and cultural origins are also unknown.

Since the San Francisco Bay was among the territory subject to Franciscan missionization, most historic ethnographic descriptions of Coastanoans are of their European-modified lifestyles. The Mission Dolores in San Francisco contained a mixture of Indians from the East Bay, the Peninsula and further south. Mission life invariably effaced even traditional recollection of the forefathers' habits and the native American populations were eventually completely diminished in the region subject to missionization with the exception of a few scattered individuals.

The Spanish three-way California settlement scheme which included the establishment of missions, presidios and ranchos was, upon Mexican independence, replaced by the Mexican land grant system. Like much of the State, San Carlos was originally part of the Spanish Ranchero land grant system. The Arguello family owned Rancho de las Pulgas, which encompassed the area now known as San Carlos and their Rancho was by far the largest tract on the Peninsula. Their property measured 35,250 acres in size and stretched from San Mateo Creek to San Francisco Creek. Official title was awarded to the family in 1835 by the Mexican government.

In the 1850's, the land which was to become San Carlos was purchased as a dairy farm by Timothy Guy Phelps, who came to California as a "forty-niner" during the Gold Rush. While he never became a successful gold miner, he did become one of the Peninsula's most famous and respected citizens. As a self-made, self-educated man he developed talents both as a large-scale rancher and as a public spokesman. He later served in the State Legislature and as a Congressman, was a personal friend of President Lincoln's, and served as president of the Regents of the University of California for many years. He invested in a number of California enterprises, including the building of railroads and the establishment of financial institutions. He sold his dairy farm in 1887 to make way for the town of San Carlos.⁷

After three earlier attempts by promoters, it was not until the 1920's that the community began to take hold. After World War I, the town

⁷ Stanger, Frank M., South from San Francisco San Mateo County Historical Association (1963)

population increased so quickly that it developed the reputation for the West's fastest growing town. San Carlos incorporated in 1925 with a population of 600.⁸

Significant Sites. An archival study of the archaeologic resources in San Carlos was performed in conjunction with the 1978 General Plan Environmental Impact Report. According to that document, Dr. Robert Cartier of Archaeological Resource Management determined that the lands in the vicinity of the three intermittent streams, Pulgas, Brittan and Cordilleras Creeks, would be the most likely areas to contain pre-historic remains. A copy of the archaeologic survey is on file with the State Department of Parks and Recreation and with the City of San Carlos, however it is a confidential document and is not available to the general public.

The former Conservation Element designated four buildings in San Carlos to be Historic Sites. The City Historian and the San Carlos Villagers, and the San Mateo County Historical Society selected the sites by virtue of their age, architectural integrity and background information. The four sites are designated on the Historic and Natural Resource Inventory Exhibit OSC-2; and they include: 1) the Southern Pacific Railroad Station, 2) the San Carlos Fire House, 3) the Brittan Home, and 4) the Brittan Carriage House.

Climate and Air Resources

The City of San Carlos has a Mediterranean type of climate, characterized by dry and relatively cool summers and by wet, mild winters. Data from the nearest weather station in Redwood City is representative of the weather in San Carlos. The annual mean temperature is 58.9°F; January is the coldest month with an average temperature of 48.4°F and July is the warmest month with an average temperature of 68.2°F. The average annual precipitation at Redwood City is 19.70 inches with most of it falling from October through April. Winds are generally from the west and northwest, but southeasterly winds are not uncommon during the passage of storm systems during the winter. A high pressure system (the Pacific High) is located over the eastern Pacific Ocean during the summer months. As the air in this system descends, it is compressed and becomes warmer. The height at which this warm layer of air overlays cooler air is called the inversion height. Other inversions are formed by the rapid cooling of the layers of air near the earth's surface and so are located nearer to the ground.

The air quality of an area depends on the meteorology and topography, and on the number, distribution, and strength of sources of air pollution. The major sources of air pollution in the San Carlos area are vehicular

⁸ Mahoney, Effie C., Through the Years in San Carlos, privately printed by the San Mateo Times for the San Carlos Villagers, 1967.

traffic, industry, natural gas and fuel oil combustion for space and water heating and cooking, and disturbance of soil during construction activities. The influence of U.S. 101 on the air quality is only occasional because it is generally downwind of San Carlos. The ambient air quality of the City is primarily determined by the traffic on local and through streets within the City. Because of the higher traffic volumes and number of buildings in the eastern half of the City, the ambient air quality decreases from west to east within the City. Local air quality is primarily determined by the major roadways. Elevated levels of pollutants occur along El Camino Real, Alameda de las Pulgas, Laurel Street, Industrial Way, and Elm Street (between Holly Street and San Carlos Avenue), San Carlos Avenue, Holly Street, Brittan Avenue, and Howard Avenue (between Laurel Street and El Camino Real).

Temperature inversions suppress vertical motion and so act as a lid to limit the vertical dispersion of the pollutants. Low level inversion tend to be more common during the winter months. This, combined with the more frequent occurrence of light winds during the winter, results in higher concentrations of all air pollutants except oxidants during the winter months. The oxidant levels are highest during the summer months because they result from photochemical reactions which depend on the amount and intensity of sunlight.

The location of the City on the eastern slope of the Santa Cruz Mountains also influences the air quality. Upslope and downslope air movement during periods of heating and cooling helps to disperse pollutants during near-calm wind conditions. During periods of inversions and northeasterly to southeasterly winds, pollutants from other areas of the Bay Area may accumulate over the City.

Regional air quality conditions are monitored continually and analyzed annually by the Bay Area Air Quality Management District (BAAQMD). The nearest operating air quality monitoring station in the project vicinity is that located in Redwood City, southeast of San Carlos. Data on maximum concentrations recorded for various pollutants as well as information on frequency with which standards were exceeded during 1979, 1980 and 1981 are included in Table OSC-3 for the Redwood City station. Other Bay Area monitoring station data are presented for comparison. Redwood City air quality is generally considered lower than that in San Carlos since Redwood City is subject to the accumulation of pollutants from a greater number of upwind sources.

During the previous three-year interval in Redwood City, the government standards for carbon monoxide, nitrogen dioxide and sulfur dioxide were never exceeded, while total suspended particulate levels exceeded

state standards on two days, but never exceeded federal standards. Ozone exceeded government standards on four days during the three-year period.

Maximum pollution concentrations have been plotted on air pollution isopleth maps for the U.S. Department of Housing and Urban Development and Army Corps of Engineers. Federal standards for pollutants which most affect the local air quality conditions are presented below in Table OSC-2 alongside existing concentrations in the regional area.

TABLE OSC-2 SELECTED POLLUTANTS WHICH MAY AFFECT THE PROJECT AREA*

<u>POLLUTANT</u>	<u>FEDERAL STANDARDS</u>	<u>EXISTING CONCENTRATIONS</u>	<u>CONFORMANCE</u>
Carbon Monoxide	60 $\mu\text{g}/\text{m}^3$ (annual geometric mean)	40 $\mu\text{g}/\text{m}^3$ (annual geometric mean)	Yes
Suspended Particulates Matter	10 mg/m^3 (maximum 8 hour concentrate)	7 mg/m^3 (maximum geometric mean)	Yes

* Air pollution Isopleth Maps, U.S. Department of Housing and Urban Development and U.S. Army Corps of Engineers, prepared by URS Company, 1978.

Energy Conservation

The 1976 General Plan EIR provided an estimate of total energy use in the San Carlos area. The unit of measurement used in the estimate was the British thermal unit, therefore it was possible to compare various forms of energy consumed by different categories of land use. The analysis revealed that 60 percent of the energy used in San Carlos is for vehicle fuel. Nearly all natural gas is used in residential structures. Approximately 56 percent of the electricity in San Carlos is used by commercial and industrial structures, whereas 44 percent is used by residences.

There are two main types of planning decisions with which the City can encourage conservation of energy. One is through the efficient design of transportation networks and the other is through the encouragement of active solar technology and passive solar design in construction or modification of structures. Transportation improvements are addressed in the Circulation Element, and solar energy policy in the Housing Element.

TABLE OSC-3: AIR POLLUTION IN THE BAY AREA BY STATION AND CONTAMINANT:

For ozone (O₃) and for nitrogen dioxide (NO₂), "max" is the highest hourly average value in parts per hundred million. For carbon monoxide (CO), "max" is highest 8-hour average value in parts per million. (The one-hour standard for CO was never exceeded during the year.) For sulfur dioxide (SO₂), "max" is highest 24-hour average value expressed in parts per million. For total suspended particulates (TSP), "mean" is annual geometric mean in micrograms per cubic meter. "Days" columns give number of days per year an air quality standard was exceeded: Federal for O₃ and CO, State for NO₂ and SO₂, both for TSP. For TSP, Days > S refer to State 100 µg/m³ standard, Days > F refer to Federal 150 µg/m³ secondary standard. The 3-year average for ozone, adjusted for instrument down-time, is the governing Federal standard (called Expected Annual Exceedance). Monitoring for O₃, CO and NO₂ is continuous; monitoring for SO₂ and TSP is on the Federal systematic 6-day schedule.

* 1980 Mountain View data missing for fall ozone episode period.

1980

Stations	OZONE			CO		NO ₂		SO ₂		TSP		
	Max.	Days	3-Yr. Avg.	Max.	Days	Max.	Days	Max.	Days	Mean	Days > S	Days > F
San Francisco	9	0	0.0	7.5	0	17	0	.018	0	52	6	1
San Rafael	11	0	0.7	7.0	0	16	0	.010	0	40	1	0
Richmond	12	0	0.3	5.0	0	11	0	.018	0	53	3	0
Pittsburgh	13	1	2.7	5.6	0	9	0	.027	0	66	14	3
Concord	14	3	4.7	6.9	0	15	0	.019	0	49	8	2
Oakland	12	0	0.0	7.4	0	—	—	—	—	—	—	—
San Leandro	15	4	2.7	—	—	—	—	—	—	—	—	—
Hayward	17	4	3.9	—	—	—	—	—	—	—	—	—
Fremont	19	6	5.6	7.1	0	23	0	.003	0	57	8	1
Livermore	18	2	2.2	6.8	—	15	0	.005	0	61	9	0
Alum Rock	19	6	9.3	—	—	—	—	—	—	—	—	—
San Jose	17	3	6.2	16.4	15	26	1	.008	0	74	15	3
Gilroy	20	7	3.9	5.8	0	—	—	—	—	—	—	—
Los Gatos	17	13	15.4	—	—	—	—	—	—	—	—	—
Mountain View	12*	0*	0.7*	—	—	—	—	—	—	—	—	—
Redwood City	15	2	0.8	8.2	0	15	0	.003	0	46	1	0
Santa Rosa	12	0	0.0	7.6	0	11	0	.001	0	44	2	0
Sonoma	12	0	1.0	—	—	—	—	—	—	—	—	—
Napa	12	0	0.7	8.5	0	12	0	.002	0	54	5	0
Vallejo	14	1	1.0	13.0	3	9	0	.008	0	52	6	1
Fairfield	12	0	0.4	—	—	—	—	—	—	—	—	—

1979

Stations	OZONE			CO		NO ₂		SO ₂		TSP		
	Max.	Days	3-Yr. Avg.	Max.	Days	Max.	Days	Max.	Days	Mean	Days > S	Days > F
San Francisco	8	0	0.0	13.8	2	16	0	.034	0	42	1	0
San Rafael	11	0	0.7	9.2	1	10	0	.012	0	39	1	0
Richmond	10	0	0.3	5.4	0	13	0	.021	0	50	2	0
Pittsburg	14	1	2.3	5.6	0	8	0	.011	0	60	9	0
Concord	12	0	4.4	10.0	1	15	0	.008	0	45	2	1
Walnut Creek	14	1	2.7	—	—	—	—	—	—	—	—	—
Oakland	11	0	0.0	7.0	0	19	0	—	—	45	6	2
San Leandro	15	1	1.2	—	—	—	—	—	—	—	—	—
Hayward	17	1	2.4	—	—	—	—	—	—	—	—	—
Fremont	17	2	4.0	7.4	0	18	0	.004	0	56	4	1
Livermore	16	3	2.7	6.1	0	14	0	.004	0	—	—	—
Alum Rock	19	4	7.2	—	—	—	—	—	—	—	—	—
San Jose	15	4	6.4	13.6	17	22	0	.003	0	63	10	2
Gilroy	12	0	1.3	6.2	0	17	0	.002	0	55	8	0
Los Gatos	17	9	11.9	—	—	—	—	—	—	—	—	—
Saratoga	15	2	4.9	5.8	0	24	0	.003	0	49	1	0
Mountain View	13	1	1.0	—	—	—	—	—	—	—	—	—
Redwood City	14	1	0.7	7.6	0	17	0	.002	0	47	3	0
Burlingame	9	0	0.8	7.2	0	22	0	.006	0	33	1	0
Petaluma	8	0	0.0	—	—	—	—	—	—	—	—	—
Santa Rosa	9	0	0.0	10.1	2	10	0	.001	0	36	0	0
Sonoma	13	1	1.0	—	—	—	—	—	—	—	—	—
Napa	11	0	1.0	8.4	0	10	0	.003	0	51	3	0
Vallejo	10	0	1.0	9.2	1	10	0	.010	0	46	5	0
Fairfield	9	0	0.8	—	—	—	—	—	—	—	—	—
Crockett	—	—	—	—	—	—	—	.015	0	—	—	—

TABLE OSC-3: AIR POLLUTION IN THE BAY AREA BY STATION AND CONTAMINANT: (continued)

1981

Stations	OZONE			CO		NO ₂		SO ₂		TSP		
	Max.	Days	3-Yr. Avg.	Max.	Days	Max.	Days	Max.	Days	Mean	Days > S	Days > F
San Francisco	7	0	0.0	11.2*	1	11	0	.016	0	56	1	0
San Rafael	9	0	0.0	4.5	0	9	0	.005	0	33	0	0
Richmond	8	0	0.0	3.8	0	11	0	.028	0	51	1	0
Pittsburg	11	0	0.7	4.0	0	7	0	.010	0	53	3	0
Concord	13	2	2.0	5.1	0	12	0	.017	0	44	1	0
Oakland	9	0	0.0	5.4	0	—	—	—	—	—	—	—
San Leandro	12	0	2.5	—	—	—	—	—	—	—	—	—
Hayward	11	0	2.5	—	—	—	—	—	—	—	—	—
Fremont	16	3	3.7	4.8	0	14	0	.002	0	47	0	0
Livermore	14	2	2.4	3.8	0	14	0	.002	0	45	0	0
Alum Rock, S.J.	18	4	5.6	—	—	—	—	—	—	—	—	—
San Jose	15	1	2.7	10.8	5	22	0	.003	0	64	5	0
Moorpark, S.J.	—	—	—	—	—	—	—	—	—	46	1	0
Gilroy	14	1	3.8	4.3	0	—	—	—	—	—	—	—
Los Gatos	14	2	9.9	—	—	—	—	—	—	—	—	—
Mountain View	14	2	1.7	—	—	—	—	—	—	—	—	—
Redwood City	13	1	1.3	6.4	0	9	0	<.001	0	42	0	0
Santa Rosa	8	0	0.0	5.8	0	9	0	.002	0	41	0	0
Sonoma	9	0	0.4	—	—	—	—	—	—	—	—	—
Napa	11	0	0.0	6.5	0	8	0	.002	0	46	0	0
Vallejo	12	0	0.3	8.6	0	8	0	.004	0	45	1	0
Fairfield	10	0	0.0	—	—	—	—	—	—	—	—	—

*New micro-scale siting for street-level CO maximums.

TABLE OSC-4: ESTIMATED ANNUAL ENERGY USE BY EXISTING DEVELOPMENT
(at source) ***

	Electricity (Btu x 10 ⁹)	Natural Gas (Btu x 10 ⁹)	Vehicle (Btu x 10 ⁹)
Within City Limits			
10,352 residential units*	610	1,200	4,500
Commercial & Industrial**	790	100	unknown
Within Sphere of Influence			
616 Residential units* (or equivalent)	36	84	266
	1,400	1,400	4,800+
GRAND TOTAL	7,600+		

* Average residential gas and electric use was assumed to be similar to use rates measured for San Mateo County (ERCDC, 1976, p. 14). Vehicular fuel use was based upon an estimated 29,000 vehicle miles per residential unit.

** Commercial and industrial gas and electric use, including the Harbor Industrial area, was estimated by subtracting the estimated residential use from PG&E's total sales in San Carlos.

*** Source: General Plan EIR for City of San Carlos, Environmental Science Associates, Inc., 1978

Water Quality

San Carlos is located in the watersheds of three creeks: Pulgas Creek, Brittan Creek and Cordilleras Creek. The streams are intermittent and generally carry water only in the winter rainy period. Pulgas and Brittan Creeks are channelized in conduits in their lower reaches and empty into Steinberger Slough. Cordilleras Creek has a natural channel in all portions of the City and empties into a slough in the tidal marshland of Redwood City. The water flowing in each of the creeks ultimately flows into San Francisco Bay.

Portions of the creek channels and the low-lying area to the west of Bayshore Freeway are located within flood hazard areas of the 100-year storm mapped in the Seismic Safety Element.

The quality of surface runoff in San Carlos is generally poor due to the presence of common urban pollutants, e.g., surface litter, oil, gasoline, grease, paint, rubber, fertilizers, pesticides and herbicides. In addition, residents who live along the creeks sometimes dump garden rubbish into the stream channels.

Groundwater lies near the surface (within 10 feet) in the easterly, low-lying portion of the City. The water table lies deeper in the alluvial apron area. The creeks provide considerable recharge of groundwater. Groundwater in the hills is of variable depth and quantity depending upon the thickness of the soil mantle, slope and bedrock materials. Seeps are a localized hydrologic problem in the hills.

Open Space and Conservation Maps

The principal resource and reference maps for this plan element are contained herein and titled Exhibit OSC-1, Parks, Open Space and Vacant Land; and Exhibit OSC-2, Archaeologic, Historic and Biotic Resource Inventory. Reference should be made to the planning factors identified on the maps during environmental review and project review. The mapped information shown on the exhibits is approximate and is not intended to be precise for any given location, but rather to serve as an indication and guide to determining when site specific resource analysis should be undertaken.

OPEN SPACE AND CONSERVATION ELEMENT

Open Space and Conservation Policies

The following policies are set forth to help guide decision-making with regard to open space and conservation impacts in San Carlos:

1. Private open space areas within the city limits, like those of the Pulgas Creek Watershed, are subject to future development and the City shall attempt to ensure that future plans include the preservation of significant stands of natural vegetation, scenic resources, soils, and excessive slopes.
2. The City shall provide input to the Mid-Peninsula Regional Open Space District concerning planning and management of the Hassler Health Home property for public open space use as a regional park.
3. The City shall endeavor to protect vegetation, stability of soils and integrity of stream channels within the three riparian zones in San Carlos in order to preserve public safety, wildlife habitat, water quality, scenic values, potential archaeological resources, and to prevent impacts on the San Francisco Bayfront lands.
4. The City shall continue to support the preservation and enhancement of the San Carlos Airport as a significant transportation and open space use in the community; and shall maintain clear zones within its jurisdiction surrounding the Airport in accordance with standards established by the San Mateo County Airport Land Use Committee.
5. The City shall continue its program of joint use of school recreation facilities as a means of providing adequate recreation space for San Carlos citizens, and shall strive to retain school recreation facilities for neighborhood use should the School District decide closure is necessary.
6. The City shall work with Bay Area air Quality Maintenance District in attempting to reach and maintain air quality attainment standards, and shall cooperate with both public and private sector agencies to conserve energy. By making planning decisions which encourage efficient forms of transportation, improve circulation, and encourage use of solar energy, both of these policies can be forwarded.

OPEN SPACE ACTION PROGRAM


The following are specific programs which the City Council intends to pursue in implementing the Open Space Plan:

1. Provide input to the Mid-Peninsula Regional Open Space District concerning the planning and management of the Hassler Health Home property for open space purposes.
2. Acquire a minimum of 30 percent of the San Carlos High School site for active community recreation purposes. Maintain and expand the recreation facilities existing at the High School.
3. Implement the land use policy calling for preservation of neighborhood recreation facilities at closed public schools. This can be accomplished by City acquisition, developer contributions or other similar methods.



PARKS, OPEN SPACE AND VACANT LAND

0 500 2000
SCALE IN FEET

-  EXISTING PARKS
-  FUTURE PARKS
-  OPEN SPACE EASEMENT OR DEDICATION

-  PUBLIC OPEN SPACE
-  PRIVATE VACANT LANDS

-  SCENIC ROUTE
-  RIPARIAN ZONE

-  SCENIC TURNOUT
-  BIKE TRAIL



ARCHEOLOGIC, HISTORIC AND BIOTIC RESOURCES

0 800 2000
SCALE IN FEET



OAK WOODLAND/GRASSLAND



RIPARIAN ZONE



RUDERAL



SALT MARSH



DIKED SALT MARSH



ARCHEOLOGIC SENSITIVITY



HISTORIC SITE

SEISMIC SAFETY ELEMENT

SEISMIC SAFETY ELEMENT

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SEISMIC SAFETY ELEMENT

Purpose

The purpose of the Seismic Safety Element is to identify and appraise seismic and geologic hazards found in the City of San Carlos Planning Area and to develop policies and programs for seismic safety.

Relation to Other Elements, Previous General Plans and Surrounding Technical Documents

The Seismic Safety Element of a General Plan is primarily related to the Land Use, Open Space and Safety Elements. An adequate Seismic Safety Element was previously adopted for the City of San Carlos in February of 1980, Resolution No. 1980-2. The prior Element relied largely on two supporting technical documents. The first is a comprehensive two volume Seismic and Safety Element for San Mateo County.¹ The second is the Geology and Seismic Hazards Report prepared by Earth Science Associates specifically for the City.² Likewise, the revised Element presented herein will be based on the same technical information and the aforementioned documents are incorporated by reference. Unlike the former element however, this version will be presented in a very usable and readily amendable format, consistent with the rest of the General Plan, and updated with more recent technical information.

Geology of the City of San Carlos Planning Area

The San Francisco Bay Area is a part of the California Coast Ranges geomorphic province. The region is comprised generally of northwesterly trending mountain ranges and valleys, which reflect the alignment of the Coast Ranges and the prevailing orientation of major faults, folds and associated geologic units.

The City of San Carlos is physiographically situated along the northeastern flank of the central Santa Cruz Mountains and lies partially in the associated east-adjacent alluvial plain bordering the west side of the southern San Francisco Bay. The City is separated from the main Santa Cruz Mountain mass by the San Andreas fault and its attendant rift valley. The fault has a long history of earthquake activity, with horizontal displacement over geologic time postulated at hundreds of miles.

¹ San Mateo County City-County Planning Task Force, Seismic and Safety Elements of the General Plan, Volumes 1 and 2, July, 1975.

² Earth Science Associates, Geology and Geologic and Seismic Hazards, City of San Carlos, California, August, 1975.

The bedrock types underlying the City comprise the sedimentary-volcanic-metamorphic assemblage of Franciscan rocks, and the sandstone and minor shale of the Butano sandstone. These rocks exist in masses having the form of blocks, slices, and wedges, which are, for the most part, separated by long-inactive faults (shear zones). Internal structure within these individual rock masses is in general defined by bedding in the layered sedimentary rocks, by layering in the volcanic and metamorphic rocks, and by jointing and shear foliation locally in all units. The broad, rolling, upland surface which characterizes much of the hillside area is part of the extensive uplifted erosion surface that exists along the Bay side of the north-central Santa Cruz Mountains. Within the City of San Carlos, this surface is interrupted by three major canyons carrying the drainage courses of Cordilleras Creek, Brittan Creek paralleling Brittan Avenue, and Pulgas Creek. The geologic units present in San Carlos are described in detail in the Earth Science Associates report, *Geology and Geologic and Seismic Hazards*.

Geologic Map. The Geologic Map, included in this element, indicates the different geologic units and the location of known fault traces, shear zones, landslide deposits and headscarp areas and their direction of movement or creep. More detailed geologic information is available in the original Earth Science Associates report and accompanying maps.

Exposure to Seismic Effects

The entire San Francisco Bay Area is a seismically active region. According to San Mateo County's Seismic Safety Element there are no known active or potentially active faults within the City of San Carlos, however the San Andreas is located approximately 1.5 miles west of Crestview Drive. San Carlos is subject to periodic very strong earthquakes which originate either on the San Andreas or from the Hayward and Calaveras Faults in the East Bay. Historic records show that severe earthquake shaking affected the San Carlos area in 1836, 1838, 1865, 1868 and 1906. Most geologists and seismologists agree that the seismic inactivity of this century will probably not persist in the coming decades and that an earthquake of comparable magnitude to that which occurred in 1906 may well be experienced by the current generation of Bay Area residents.

While it is not possible to eliminate all risks related to earthquakes, methods have been developed that mitigate the extent of damage resulting from earthquakes.

Seismic Hazards

Seismic hazards associated with earthquakes include the following:

- . surface faulting
- . ground shaking
- . ground failure
- . seismically induced water waves

Surface Faulting. Surface faulting is generally limited to a narrow zone along the fault which is undergoing rupture. Therefore, only those structures or facilities which cross the narrow fault zone are subject to damage from this kind of hazard.

Ground Shaking. During the time that a fault is undergoing rupture the movement of rock masses generates vibrations in the earth which transmit vibrations to man-made and natural objects on the earth's surface. The severity of ground shaking and its effects on structures depends on several complex factors listed below:

- . magnitude of earthquake
- . distance from the rupture to the structure
- . local soil and ground water conditions below the structure
- . relationship between the period of ground vibration and the period of vibration of the structure
- . the design of the structure
- . the ground acceleration
- . the duration of ground shaking

Earth shaking, in general, is the most serious potential hazard to San Carlos. However, it is not feasible to single out any one of the list of factors above as being the most critical. Most important is the quality of structural design of structures, the quality of materials used in construction and the quality of workmanship as the structure is being constructed. Proper structural design takes into account the local soil condition, the probable ground acceleration for the specific area in question, a reasonable set of design criteria for earthquake magnitude and various factors related to the way in which the materials being used in construction react under earthquake forces.

The predicted relative intensity of earth shaking in the San Carlos vicinity is shown on the map entitled "Maximum Probable Earthquake Intensity," included in this element.

Ground Failure. Ground failure is a situation in which the ground does not hold together as a result of strong earthquake shaking. The resulting ground movement or instability can cause damage to

building foundations and other structures. The types of ground failure include liquefaction, lurching, differential settlement, compaction, and seismically induced landsliding.

Liquefaction is a process in which there is rapid decrease in the shearing resistance of cohesionless soils and simultaneous, sudden, temporary increase in pore fluid pressure. This means that loose, water saturated granular materials, such as sand, silt or gravel, suddenly assume the properties of a heavy liquid. The soil loses its ability to support the downward load of a structure and the water which is present in the soil is unable to drain away. Liquefaction is a common phenomena during major earthquakes. The type of damage to structures which results is tilting, due to settlement, and cracking.

Lurching is the movement of ground materials toward a free face such as a cliff or stream bank. The earthquake forces cause earth to move in the unsupported direction and results in cracks in the ground generally paralleling the exposed bank or stream. Lurching is not related to liquefaction.

Differential settlement or compaction occurs when earthquake forces cause ground materials to become more dense. This can occur in both dry and water-saturated granular soils, however, in saturated soils the water is able to drain away allowing densification. Variations in the types of soil locally contribute to differential settlement. Structural damage is caused when different parts of a structure suddenly are non-uniformly supported by the ground below.

Seismically Induced Water Waves. Ground vibrations during an earthquake can cause waves to move across water bodies. The damage from such occurrences results from the wash-up of the wave on land. There are two forms of seismically induced water waves:

- . tsunamis - sea waves produced by submarine earthquakes
- . seiches - waves produced by earthquake motion in a lake, reservoir or similar enclosed body of water.

Seismically induced flooding results when water retaining structures such as dams or tanks fail during an earthquake. San Carlos does not lie in an area that would be subject to tsunamis, nor would it be subject to flooding caused by dam failure in the event of an earthquake.

Earthquake Hazard Zones and Fault Traces in San Carlos

Under California law special study zones, known as Alquist-Priolo Study

Zones, are established along all known active fault traces. An active fault trace is defined as one which has indicated movement during the last 11,000 years. According to the County Seismic Safety Element classification, there are no active, nor are there potentially active, faults known to exist in San Carlos. A fault trace runs through the Howard Park, San Carlos Park and Garden Terrace residential districts, approximately parallel to and 3000 feet southwest of El Camino Real. The activity of this fault is classified in a 1979 USGS technical document as "unknown", meaning that the history of movement in the past 12 million years is indeterminate.³ Several other fault traces surround the City and intersect the westernmost City boundary in the Devonshire Properties Area. Their location is indicated on the Geology Map and the movement of all local traces is classified as "unknown". According to the County Seismic Safety Element, future habitable structures should not be built across any of the fault traces and a qualified geologist should be consulted to determine the appropriate setback of proposed structures on an individual, site-specific basis.

Effects of Past Earthquakes in San Carlos

The City of San Carlos was sparsely developed at the time of the 1906 earthquake. The most complete record of the effects of the 1906 shock on the Peninsula was reported by the Carnegie Commission in a 1908 publication.⁴ Their report comments that between Belmont and San Carlos, four-fifths of the houses lost their chimneys. The railway station in San Carlos, a low one-story stone building was badly damaged. A large frame house near the station was shaken from its concrete foundations, and the foundation itself was badly cracked.

The greatest amount of historic earthquake related damage which has occurred in the San Francisco Bay Area has been caused by activity in the San Andreas Fault system, including the Hayward Fault and the Calaveras Fault branches in the East Bay Area.

Future earthquakes in San Carlos

In the future, it can be expected that the major source of earthquake damage will come from the San Andreas Fault system and that the worst

³ Pampey, Earl H. "Preliminary Map Showing Recency of Faulting in Coastal North-Central California," USGS Map MF-1070, 1979.

⁴ Larson, A. C. The California Earthquake of 1906. Report of the State Investigation Commission, Carnegie Institute, Washington D.C., Publication 87, 2 volumes, 1908.

possible future shock will not be any more severe than that which occurred in 1906. Magnitude 8.3 is, according to authorities, the upper limit to the size of any earthquake that can be generated by movement along strike dip faults such as the San Andreas. The principal effect of a great earthquake in most of the City will be the sudden, unexpected initiation of a strong shaking motion of the ground which will last approximately one minute. The shaking itself is alarming but generally harmless to people. However, it can be expected to cause sliding and tipping over of furniture, falling of objects from shelves and in some cases, collapse or partial collapse of structures such as water tanks, chimneys, or other masonry structures, all of which could of course prove dangerous to people in the wrong place during the earthquake.

Evaluation of Seismic Hazards, Other Geologic Hazards and Engineering Constraints

The geologic materials recorded on the Geologic Map have been grouped into units which react similarly to earthquake forces. These units or zones have been mapped on the accompanying Geologic Hazards Map and the predominant types of geologic hazard associated with each unit are identified and rated according to level of susceptibility in the supplemental matrix.

Additionally, conditions in various units in the City may give rise to problems or even hazards when land within these units is subjected to certain intensities of development or engineering practices. Geologic hazards associated with the various geologic units are discussed briefly below.

Earthquake Effects (Ground Failure, Shaking, Liquefaction, Tsunamis)

The most intense ground shaking will occur in the flat, alluvial and filled areas as opposed to the hillside areas. According to the Earth Science Associates report, the secondary effects may involve ground failure in the hillside area, including landsliding and rockfalls, possible lurching or fissuring in flatland areas underlain by loose water-saturated alluvial and basin units, and potential liquefaction and lateral spreading in alluvial, basin, and Bay mud units underlain by clean sands. In general, the hillside units should be less affected by either primary or secondary earthquake effects, although appreciable damage from shaking of structures may result even in areas having rock foundations. Landsliding may occur locally in colluvial deposits, landslide deposits may be reactivated, and rockfalls may occur on steeper bedrock slopes. Very strong shaking might give rise to lurching,

fissuring, and liquifaction in the flatland units. The performance of earthwork structures, including development cuts and fills, will depend on the adequacy of their design and construction. Seiches (oscillations or "sloshing" of the water) may be induced in water supply tanks. Tsunamis (sea waves generated by earthquakes) do not pose a hazard to the City. The run-up from such a wave would probably not exceed about 5 feet, and the low lying parts of the City are adequately protected by levees. Potential inundation from earthquake-related dam failure is not a hazard, since there are no existing dams within or upstream of the City.

Flooding

Except for very localized flooding and standing water, which may occur during brief intensive storms, when runoff exceeds the capacity of the storm sewer system, flooding is not a potential year-to-year problem. However, there are several areas in the City which would probably be subject to local-to-general flooding during a major 100 year storm. A 100 year storm is one which statistically would occur once in every 100 years. Such potential flood hazard areas generally occur along Pulgas Creek and Brittan Creek paralleling Brittan Avenue, and in the areas Bayward of El Camino Real. In most areas, flood waters would not be deeper than a few feet. The greatest flood hazard would occur if the maximum storm runoff coincided with an extremely high tide. The 100 year flood plain is shown on the Flood Zone Map. The source of the information is the National Flood Insurance Program, Insurance Rate Maps, U.S. Department of Housing and Urban Development.

Ground Subsidence and Settlement

Widespread ground subsidence due to ground water withdrawal is not a significant potential hazard in the area. The compaction and settlement of unconsolidated flatland materials due to loading should not present a potential hazard where foundations are properly designed and engineered. In general, significant consolidation and settlement of the Bay muds have probably already occurred due to the load of overlying man-made fill. However, the placement of new loads on these materials may result in additional settlement, so that potential settlement should be considered in the design of foundations for new structures.

Erosion

The major agents of erosion in the study area are running water and grading equipment. On any hillside unit, the ground may become susceptible to gullying erosion if the protective vegetation and topsoil are disturbed. In the undeveloped hillside parts of the City,

this is accomplished through rough grading of undrained, poorly maintained access roads, and through development of heavily used trails. Once the road or trail is established, erosion progresses both through continued abrasion by wheeled vehicles and through gullying by uncontrolled runoff. Gullies several feet deep have been eroded along some trails and accessways during the last few years. Other areas of possible erosive problems are the channels of the major streams through the flatlands units. Unprotected sections of the banks of the creek channels may be subject to erosion during periods of high flow.

Slope Stability

Problems of slope stability are most prevalent in the hillside units at places where soil creep or landsliding has occurred previously. Such areas are most sensitive to activities which tend to reduce slope stability, principal among which are addition of unusual amounts of liquid, undercutting slopes, and loading the tops of slopes. Other areas of deep colluvial deposits and steep slopes which are relatively stable under natural conditions may become subject to slope creep or sliding if subjected to extensive modifications involving the activities cited above.

Local problems of slope stability, such as man-made fill failures, have been initiated by special activities, usually associated with extensive earthwork cutting or filling. Such slides can constitute a severe local hazard if not successfully stabilized, but they affect only the immediately adjacent area. Areas which are designated as landslide deposit and scarps on the geologic map are generally in a precarious state of equilibrium and may be subject to renewed movement under the influence of imposed changes, as described in the foregoing paragraph.

It should be noted that slope instability is not widespread in the area, at least in comparison to some other notoriously unstable areas in the State. There appears to be little potential for touching off earth failures of widespread and catastrophic extent through ordinary civil construction works.

Foundation Condition Problems

Foundation conditions are generally good in the City. The chief areas of concern for foundation conditions are the shear zones, where low strength soil and rock and seepage problems may occur; where local expansive soil conditions may give rise to problems if structure foundations are not properly designed; the younger Bay mud unit where

settlement and stability problems may occur; and in the colluvial and landslide deposit units where stability problems may be encountered.

Earthwork Performance Problems

No examples of earthwork performance problems have been observed other than in local areas where old fills have failed or been damaged through sliding, creep, or erosion.

Presumably all major fills have been designed with consideration to the hazard of earthquake shaking. It might be noted, however, that neither the recently constructed fills nor the older fills have ever been subjected to a strong earthquake shock.

TABLE SS-1: CONSEQUENCES OF SEISMIC HAZARDS

	<u>HAZARD</u>	<u>CONSEQUENCE</u>
I	SHAKING	Structural damage and/or collapse of structures, fires, possible injuries, loss of life, social and economic disruption due to failure of transportation structures and public utility structures; bridges, power plants, etc.
II	GROUND FAILURE	Some injuries and loss of life, social and economic dislocation due to disruption of public utilities, gas, electricity, sewers, water. Disruption of transportation facilities such as roads, rail lines, docks. Local damage to public, residential and commercial structures. Seismically induced flooding could increase the consequences considerably.
III	LANDSLIDES, MUDSLIDES	Some injuries and minimal loss of life, localized damage to structures. Temporary interruption of transportation facilities and public utilities. Minimal social and economic disruption.
IV	SURFACE FAULT RUPTURE	Minimal injuries and life loss, localized damage to structures, public utilities and transportation facilities. Minimal social and economic disruption.

Earthquake Hazard Mitigation - Acceptable Risk Concept

One basic concept in dealing with natural disasters is the notion that life safety is the highest priority, property damage is next and temporary social disruption is the lowest priority. In this context then, various types of land use can be categorized as critical to the functioning of the community or critical because they house greater numbers of population or members of the population which are relatively unable to care for themselves during an emergency. These are listed in priority order below:

1. Structures in which a structural failure would result in considerable loss of life and property damage.
2. Structures which house emergency services or provide major public utilities.
3. Structures which house people who would be involuntarily subjected to risk or which house people who are relatively unable to care for themselves.
 - . schools
 - . hospitals
 - . jails
 - . convalescent homes
4. Structures with high occupancies.

Level of Mitigation. Based on the analysis presented in this element San Carlos should plan for the impacts of a strong earthquake such as that which would occur along the San Andreas Fault. To plan for the maximum possible earthquake is not practical nor is it economically feasible. This level is approximately equivalent to a Modified Mercalli Intensity Earthquake of intensity VII. The expected damage community-wide would be some injuries, some structural damage, but no total collapse of buildings, and some temporary social and economic disruption.

Mitigation Measures. There are four related actions which San Carlos can follow to insure mitigation of seismic related hazards.

1. Utilize geologic and seismic data in land planning so that identified risk areas are avoided or structures and landforms treated and designed to reflect local site conditions.

2. Make sure that local grading and building codes reflect measures to minimize possible seismic damage.
3. Inspect older buildings and improve earthquake design features when possible.
4. Maintain a disaster preparedness plan.

Geologic Reports. A geotechnical report was prepared in 1975 for the entire City of San Carlos addressing surface faulting, landslides, liquifaction and other types of seismic ground failure and ground shaking. Recommendations in that report, adopted by the City, include guidelines for requiring further geotechnical site-specific investigation, in the form of geologic reports, soil studies, and foundation engineering reports in certain areas of the City. A long standing City policy has been to require geotechnical studies for any project to be built on land exhibiting a slope of ten percent or more. The minimum elements to be included in the site-specific geologic, soils and foundation reports are listed in the City's 1975 Geologic Report. Requirements include the signature of an engineering geologist or civil engineer, registered in the State of California.

Special Study Area Reports. Geotechnical reports are required under the Alquist-Priolo Act prior to any development within the mapped study zones. There are no such study zones within the San Carlos City limits at this time, however should any of the mapped fault traces in San Carlos prove to be active, the Alquist-Priolo Act would apply and should be enforced.

SEISMIC SAFETY POLICIES AND PROGRAMS

Seismic Safety Element Policies

Policies listed on the next few pages are set forth to help guide land use decisions and to promote consideration of seismic and geotechnical safety in community planning and project design. They are abstracted from the County Seismic and Safety Element according to highest local relevance.

1. Continue to incorporate geotechnical hazard data into future land use decision-making, site design and construction standards.
 - a. Enforce requirements of the Alquist-Priolo Act should any fault traces in San Carlos prove to be active or potentially active.

- b. Require geologic, seismic, soils and foundation reports for proposed projects which warrant them, according to recommendations in the City's Geology and Geologic Hazards report, the Seismic and Safety Element of San Mateo County, and the Geologic and Seismic Hazards Map accompanying this plan element. Continue to require special reports for projects on land exhibiting a slope of ten percent or over.
 - c. Prohibit structural development in areas where hazards are unmitigable and enforce mitigation measures to reduce risk for projects where hazards are mitigable.
 - d. Periodically update the uniform building code in San Carlos to reflect current knowledge about seismic design of buildings.
 - c. Periodically update and integrate recent geotechnical hazard data into planning documents such as the General Plan, Zoning Ordinance and Subdivision Ordinance.
- 2. Incorporate geotechnical information into hazard reduction measures for existing land uses.
 - a. Incorporate seismic risk analysis into the City's ongoing building inspection program.
 - b. Give highest priority for geotechnical hazard reduction to inspection and improvement of critical public facilities, infrastructure and emergency service facilities.
 - 3. Encourage public education, research and information dissemination on seismic and geotechnical hazards and emergency response.
 - 4. Improve interjurisdictional, interagency cooperation with other public and private agencies for geotechnical safety in future land use planning, hazard prevention and emergency response.
 - 5. Review and maintain a Basic Emergency Operation Plan and evacuation strategy as a basis for community civil preparedness.

Seismic Safety Implementation Programs

The principal programs for implementation of the Seismic Safety Element are during Environmental Review process and through special reports which should be made conditions of application for building or subdivision permits by the City. The maps included in the Plan Element are intended to serve as a major reference to determine the principal topics which

should be of concern to the community in each area of the City. The maps are reproduced here at a scale compatible with thematic maps from other General Plan elements in order to perform comparative locational analysis, at-a-glance. More detailed information is found in the original maps of the Geology and Geologic and Seismic Hazard Report (1975).

Below are listed both existing and proposed programs for Plan Implementation. Reference is made as to whether the program is existing or proposed, the responsibility for its operation and the seismic safety element policies which are affected by its operation.

California Environmental Quality Act (CEQA) Environmental Review Procedures. The initial study for any applicable project takes into account the background geologic and seismic information presented on maps and in the text of the Plan. Particular emphasis is placed on the evaluation of major known potential hazards. (Existing Program; Policy 1 Implemented)

Subdivision Ordinance. The subdivision ordinance sets forth minimum standards for land division, site preparation and facility design. Additional standards should be incorporated to deal with the extent of grading, particularly in areas that are landslide prone, and to deal with minimum requirements for geologic reports. (Existing Program - Amendment Recommended; Policy 1 Implemented)

Inspection of Buildings. A program of inspection of buildings, particularly the older commercial buildings in San Carlos, is an ongoing activity shared by the Building Official and Fire Department. An attempt is made to inspect and require additional safety features each time new construction or renovation occurs. Structural improvements to conform with current earthquake design standards of the Building Code are incorporated where possible. (Existing Program - Policy 2 Implemented)

Project Review. Normal review of project proposals is undertaken at the time a request for building permits is made. This is oftentimes the most appropriate place to deal with detailed geologic, geotechnical and soils reports since these reports directly influence the technical review of foundation and structural design. (Existing Program; Policy 1 Implemented)

Building Code Update. This is an ongoing program which is the responsibility of the Building Official. (Existing Program, Policies 1 and 2 Implemented)

Basic Emergency Plan. San Carlos has developed an Emergency Operations Plan which is the basis of the community's civil preparedness and comprises

a principal tool for implementing the Seismic and Safety Element in the event of a major earthquake. The Plan is in need of revision and will be updated annually by the City Manager's office in cooperation with Emergency Department Staff. (Existing Program - Amendment Recommended; Policy 5 Implemented)

LEGEND

AGE	MAP UNITS	
CENOZOIC	QUATERNARY	Qf
		MAN-MADE FILL; WHERE MAPPED SEPARATELY
	HOLOCENE	Qh
		UNCONFORMITY
		LANDSLIDE DEPOSITS: QUERIED WHERE UNCERTAIN
	PLEISTOCENE	Qc
		UNCONFORMITY
		COLLUVIAL DEPOSITS: QUERIED WHERE UNCERTAIN
		Oyf
		COARSE-GRAINED YOUNGER ALLUVIAL FAN DEPOSITS
TERTIARY	Eocene	Oyo
		FINE-GRAINED YOUNGER ALLUVIAL FAN DEPOSITS
	Pleistocene	Qb
		YOUNGER BASIN DEPOSITS
		Oym
		YOUNGER BAY MUD
	Pleistocene	Qol
		COARSE-GRAINED OLDER FAN DEPOSITS, CONTACT NOT MAPPED IN EATON MEADOWS AREA
	Pleistocene	Qob
		FINE-GRAINED OLDER FAN AND BASIN DEPOSITS
	Pleistocene	UNCONFORMITY
		Tb?
		BOTANO (?) SANDSTONE

SYMBOLS

	SHEAR ZONE SOLID WHERE LOCATED AT SURFACE OR WITHIN APPROXIMATELY 5 FT. OF SURFACE AS INFERRED FROM SUBSURFACE DATA; DOTTED WHERE CONCEALED BENEATH MORE THAN APPROXIMATELY 5 FT. OF SURFICIAL DEPOSITS OR BENEATH MAN-MADE FILL; QUERIED WHERE EXTENSION UNKNOWN.
	LANDSLIDE HEADSCARP AREA
	LANDSLIDE DEPOSIT
	DIRECTION OF DOWNSLOPE MOVEMENT OF LANDSLIDE DEPOSIT
	DIRECTION OF DOWNSLOPE CREEP IN AREAS OF COLLUVIAL



GEOLOGIC UNITS

0 800 2000
SCALE IN FEET



LEGEND

POTENTIAL GEOLOGIC AND SEISMIC HAZARDS UNITS

FLATLAND UNITS

- A1** MAN-MADE FILL OVERLYING UNCONSOLIDATED HOLOCENE BAY MUD DEPOSITS
- A2** UNCONSOLIDATED HOLOCENE FINE TO COARSE GRAINED ALLUVIAL FAN AND BASIN DEPOSITS; WATER TABLE 0 TO 10 FEET
- A3** UNCONSOLIDATED HOLOCENE FINE TO COARSE GRAINED ALLUVIAL FAN DEPOSITS; WATER TABLE 0 TO 10 FEET
- A4** WEAKLY CONSOLIDATED PLEISTOCENE FINE TO COARSE GRAINED ALLUVIAL FAN AND BASIN DEPOSITS
- HILLSIDE UNIT**
- B** COLLUVIAL AND LANDSLIDE DEPOSITS LOCALLY OVERLYING BUTANO (7) SANDSTONE AND FRANCISCAN BEDROCK UNITS

SYMBOLS

- FAULT TRACE. EVIDENCE OF THEIR LATEST MOVEMENT IS LACKING. THEREFORE THEY ARE CLASSIFIED AS "UNKNOWN AGE"

POTENTIAL GEOLOGIC AND SEISMIC HAZARDS

HAZARDS UNITS	A1	A2	A3	A4	B
FLOODING	H	H	M	M	O
TELEGRAPH	O	O	O	O	O
GROUND SETTLEMENT	H	L	O	O	L
FAULT GROUND RUPTURE	O	O	O	O	O
SEISMICALLY INDUCED GROUND FAILURE	H	M	L	L	M
SEISMICALLY INDUCED GROUND SHAKING	H	H	H	H	H
LIQUEFACTION	H	M	L	L	O
EROSION	L	L	L	L	M
SLOPE STABILITY	O	O	L	L	M
EXPANSIVITY	O	L TO H	L	L TO M	L TO H
REQUIRED REPORTS					
ENGINEERING GEOLOGIC REPORT SIGNED BY CERTIFIED ENGINEERING GEOLOGIST					X
SOIL AND FOUNDATION ENGINEERING REPORT SIGNED BY REGISTERED CIVIL ENGINEER	X	X	X	X	X

- O - NO HAZARD OR HAZARD UNLIKELY
- L - GENERALLY LOW POTENTIAL
- M - GENERALLY MODERATE POTENTIAL
- H - GENERALLY HIGH POTENTIAL

- a. NO REPORT REQUIRED FOR ADDITIONS TO EXISTING SINGLE FAMILY RESIDENTIAL BUILDINGS THAT DO NOT EXCEED 50% OF MARKET VALUE
- b. NO REPORT REQUIRED FOR SINGLE FAMILY RESIDENCE, UNLESS SITUATED WITHIN 50 FEET OF CREEK BANKS



GEOLOGIC AND SEISMIC HAZARD

0 800 2000
SCALE IN FEET

SOURCE: Earth Science Associates, Geology and Geologic and Seismic Hazards, City of San Carlos, 1975. Fault traces are as identified in the "Technical Hazards Synthesis Map", County of San Mateo Seismic and Safety Element, 1975, and in "Preliminary Map Showing Recency of Faulting in Coastal California", Earl H. Pomperoy, U.S.G.S., 1979.



MODIFIED MERCALLI INTENSITY SCALE

Masonry A, B, C, D. To avoid ambiguity of language, the quality of masonry, brick or otherwise, is specified by the following lettering.

Masonry A. Good workmanship, mortar and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces.

Masonry B. Good workmanship and mortar; reinforced, but not designed in detail to resist lateral forces.

Masonry C. Ordinary workmanship and mortar; no extreme weaknesses like failing to tie in at corners, but neither reinforced nor designed against horizontal forces.

Masonry D. Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.

- I. Not felt. Marginal and long-period effects of large earthquakes.
- II. Felt by persons at rest, on upper floors, or favorably placed.
- III. Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
- IV. Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV wooden walls and frame creak.
- V. Felt outdoors; direction estimated. Sleepers wakened. Liquid disturbed, some spilled. Some unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
- VI. Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knicknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken visibly, or heard to rustle.
- VII. Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices also unbraced parapets and architectural ornaments. Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
- VIII. Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on

foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.

- IX. General panic. Masonry D destroyed, masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. General damage to foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas sand and mud ejected, earthquake fountains, sand craters.
- X. Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
- XI. Rails bent greatly. Underground pipelines completely out of service.
- XII. Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.



MAXIMUM PREDICTED EARTHQUAKE INTENSITY

0 1 2
Map Scale in Miles



A

Very Violent

C

Very Strong

E

Weak

B

Violent

D

Strong

— — —
Fault

R
Reservoir or Lake

1

1

1

NOISE ELEMENT

NOISE ELEMENT

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NOISE ELEMENT

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NOISE ELEMENT

Purpose

The Noise Element is intended to describe the existing and projected future noise environments in San Carlos so harmful and annoying sound levels can be avoided. In the Noise Element major noise sources are identified, noise levels throughout the community are recorded, the effects of noise on the community are discussed and ways to minimize unwanted noise are outlined.

Relation to Other Elements, Previous Noise Elements and Amendments

The Noise Element is related closely to the Land Use, Circulation and Housing Elements. The principal noise generator, typically, is vehicular traffic and people are most sensitive to noise levels which disturb their residential environment. A previous Noise Element, prepared for the City of San Carlos by Edward L. Pack and Associates, Acoustical Consultants, was written in November, 1975 and an amendment was adopted in August, 1978. The revised Noise Element presented herein will rely on the technical data gathered for and presented in that document, but will be updated and revised to a more readily amendable and usable style, consistent with the other General Plan Elements.

What is Noise?

Noise is defined as 'unwanted sound' and is broadly recognized as a form of environmental degradation. Three qualities characterize the effect of noise on the listener:

1. The frequency of the noise.
2. The intensity of the noise.
3. The time-varying character of the noise.

Frequency is defined as the number of oscillations a particle undergoes in one second. Intensity is the measurement of the sound energy or pressure. The human ear is sensitive to a wide range of intensity. The range of sound pressure levels between the faintest audible sound and the loudest sound the ear can withstand is in the order of one to one billion. In order to conveniently handle this enormous range of numbers, a logarithmic scale has been established so the entire range is compressed to a range of from zero to 180. The sound pressure scale is expressed in decibels. Because the decibel scale is logarithmic, a small decibel change represents a large change in intensity. A doubling of the sound energy results in an increase of three decibels. The human ear, however, cannot usually perceive a three decibel change.

It usually takes a change of about 10 decibels before a doubling of loudness is perceived.

The time-varying character of sound is particularly important to recognize. Noise levels throughout the community do not remain constant but rather fluctuate constantly both over time and in duration. Community noise consists of sources both distant and near to the listener. Distant sources may include traffic, wind and industrial activities. Nearby sources may include individual vehicles passing by, aircraft flying overhead and trains passing by.

Measuring Noise - The A Scale

Sound is measured by instruments which pick up sound in a microphone and convert sound vibrations to electric energy. In order to approximate the hearing response of the human ear, filters are placed in the sound level meter to deemphasize low and high frequencies, thus emphasizing the normal range of human hearing. This weighting of noise measurement is called the A scale and measurements are referred to as dBA (A weighted decibel scale).

The A-weighted scale accurately describes environmental noise at any one particular time. However, community noise levels vary continuously, therefore all of the individual noise readings must be averaged over a 24 hour period to give an equivalent level. This equivalent noise level, expressed as CNEL (Community Noise Equivalent Level) can then be plotted on a map to illustrate average noise levels throughout the community.

Cumulative Noise Exposure - The CNEL

Noise from a passing truck or airplane flying overhead typically increases as the noise source approaches the listener and subsides as the source draws away. The measurement of one such occurrence is referred to as a 'single event'. In order to determine the total impact of all the single events that occur at a given location, all of the single events must be averaged together to form the equivalent of a steady noise value. The CNEL (Community Noise Equivalent Level) scale provides this average and is particularly well-suited for the purpose because it recognizes that human sensitivity to noise increases during the evening and nighttime. The CNEL values represented on the noise maps include an addition of 5 dBA for evening noise levels and 5 dBA for nighttime levels within the 24 hour averages calculated.

Human Reaction to Environmental Noise

The effects of noise on people can be grouped in three categories:

1. Subjective Effects: annoyance, nuisance, dissatisfaction.
2. Interference in Activities: interference with sleep, speech, learning.
3. Physiological Effects: ranging from alarm or startle to hearing loss.

Most sound levels produce effects in just the first two categories. No completely satisfactory measure of the subjective effects of noise can be made because of the wide range of individual reaction to noise. Medical researchers suggest there is correlation between noise and mental stress. The capability of noise to interfere with speech is, of course, easily recognized.

The physiological effects of noise have been studied. The body responds to loud and sudden noises by a tensing of muscles, change in heartbeat and constriction of some blood vessels. Continued exposure to loud noises leads to body fatigue and can cause permanent hearing loss.

The following conclusions have been established through extensive study:

1. Except in carefully controlled laboratory experiments, an increase of only one dBA cannot be perceived by humans.
2. Outside of the laboratory a three dBA increase is considered to be just noticeable.
3. A change of five dBA would be noticeable and would likely evoke a community reaction.
4. A ten dBA increase is subjectively heard as a doubling of loudness and would most certainly cause community response.

Chart of Typical A-Weighted Sound Levels

The chart on the next page is intended to show common sound levels.

Noise Compatibility Standards

Over the years many studies have been performed to determine how much noise is acceptable for different land uses. The Environmental Protection Agency has given emphasis to levels deemed appropriate for residential land uses and has suggested the following:

1. For prevention of speech interference and annoyance in indoor residential areas: 45 dBA

TABLE N-1: TYPICAL A-WEIGHTED SOUND LEVELS

<u>SOUND SOURCE</u>	<u>dba READING</u>	<u>RESPONSE</u>
CARRIER DECK OPERATION	145 130	painfully loud limit amplified speech
JET TAKEOFF (listener at 200 feet)	120	
AUTO HORN (listener 3 feet) DISCO	115	maximum vocal effort
JET TAKEOFF (listener at 2000 feet) GARBAGE TRUCK	100	
NEW YORK SUBWAY STATION HEAVY TRUCK (listener 50 feet away)	90	very annoying loudness
ALARM CLOCK	80	annoying
FREIGHT TRAIN (listener 50 feet away) FREEWAY TRAFFIC (listener 50 feet away)	70	telephone use difficult
AIR CONDITIONING UNIT (listener 20 feet away)	60	intrusive noise levels
LIGHT AUTO TRAFFIC (listener 100 feet away)	50	quiet
RESIDENTIAL LIVING ROOM	40	
LIBRARY (soft whisper at 30 feet)	30	very quiet
BROADCASTING STUDIO	20 10 0	just audible threshold of hearing

[-----noises can cause hearing impairment-----]

2. For prevention of speech interference and annoyance in outdoor residential areas: 55 dBA

Beginning with these basic criteria, recent work by the California Department of Health, Office of Noise Control, has resulted in the accompanying compatibility chart which attempts to match each land use type with an appropriate range of noise levels. The land use compatibility chart used in conjunction with the noise exposure contours shown on the noise maps, provides a basis for decision making. Proposals for rezoning, for instance, can be evaluated for potential noise conflict without much difficulty. Mitigation measures can be imposed, when appropriate, as conditions of project approval.

Relation of Noise Element to State Administrative Code

Title 25 of the California Administrative Code requires that an acoustical analysis be prepared for new hotels, motels and multiple-family dwellings which are to be located where the CNEL is greater than 60 CNEL outdoors. The acoustical report must discuss how the exterior noise levels can be controlled to 60 CNEL and how the noise environment inside these structures can be controlled to not exceed 45 CNEL. The acoustical analysis is appropriately included as part of an Environmental Impact Report or can be a separate report accompanying the building permit application when no EIR is required.

How to Use the Noise Compatibility Chart and CNEL Contours

The CNEL contours on the noise maps are estimated values based on traffic volumes and known point noise sources. The calculated values have been adjusted to reflect noise measurements taken in 1975 with a noise meter at a variety of locations and times in the community.

The CNEL contours are outdated in some cases and are not intended to be precise for a given location but rather for use as a guide to determine when site specific acoustic analysis should be undertaken. As such, the noise maps provide an early warning system in the decision making process. One goal of required site specific acoustic analysis should be to develop information which can be used to update the Noise Contour Map, area-by-area.

The second product of site specific acoustic analysis should be recommended ways in which outdoor noise levels can be controlled to the level set forth in the compatibility chart for the land use type under consideration, and, for uses covered by the California Administrative Code, recommended ways in which exterior noise can

be controlled from intruding to interior spaces. Standards for the preparation of acoustical reports are as follows:

1. Minimum Contents of Acoustical Reports - Site specific reports should contain a brief description of the project and the sensitivity of the land use type to noise, an accurate map describing the setting with surrounding uses and noise sources identified, and a quantitative description of the noise environment. For multi-story structures the report should discuss noise effects for the upper floors. Field noise sample measurements should be taken over several days and the average CNEL calculated should be based on day-time, evening and nighttime readings. If the project is located within the vicinity of a previously collected measurement, as shown on the contour map, a measurement should also be duplicated at that point for purposes of updating the Community Noise Level Contour Map.
2. Qualifications for Preparing an Acoustical Report - Noise reports should be prepared by an acoustical engineer holding a degree in engineering, architecture, physics or allied discipline able to demonstrate a minimum of two years experience in the following areas of acoustics: transportation noise forecasting, building acoustics, field measurement of noise and noise mitigation.

The Noise Environment in San Carlos

The Noise Contour Map included in this element is based primarily on the 1975 measurements and noise consultant-generated contours which accompanied the former Noise Element. It has been revised to include current information from the Airport Land Use Committee's maximum projected contours for the San Carlos Airport. Likewise, CalTrans has provided up-to-date information for noise along the Bayshore Freeway and the Southern Pacific Company supplied recent noise levels for the railroad. With the exception of these revisions, all other contours were taken from the 1975 element and are in need of revision. As traffic volumes have increased on the streets of the City over the past six years, noise levels associated with traffic have also increased.

The methodology used to generate the 1975 contour map is described fully in the previous Noise Element. Field measurements were taken at 30 locations distributed throughout the community. These points are shown on the accompanying contour map. Measurement procedures, equipment acoustical assessment rating scales and calculations are all explained in that document and the individual

data sheets for point measurements are appended to the 1975 element.

The major contributors to the noise environment in San Carlos are transportation sources located in the eastern section of the City. East San Carlos is comprised predominantly of commercial and industrial land uses, which are relatively less sensitive to noise. Lands surrounding the San Carlos Airport, U.S. 101 and the Southern Pacific Railroad, and El Camino Real are the primary areas where noise levels reach the 70 CNEL level.

Sensitive receptors in San Carlos are also indicated on the Noise Contour Map and include all schools, rest homes and parks. Standards for precluding activity interference are applicable to these receptors as well as to residential areas.

Analysis of the population exposed to all ranges of Community Noise Equivalent Levels in residential San Carlos was included as an amendment to the previously adopted Noise Element in 1978. Census tract population data from the 1970 census was correlated with noise level contour data to derive the approximate total numbers of persons exposed to various noise levels in their homes. These estimates reveal that the highest levels of noise are experienced by a small percentage of people living east of the Bayshore Freeway between Industrial and Old County Roads. Additionally, the following thoroughfares in San Carlos are subject to noise levels of over 65 CNEL, and sensitive receptors which are situated within approximately 50 feet of the streets are likely to experience noise levels which are classified as conditionally acceptable.

- . San Carlos Avenue, east of Cambridge
- . Alameda de las Pulgas
- . Brittan Avenue
- . Laurel Street
- . El Camino Real

Table N-2 shows the total number of persons exposed to various noise levels in 1977. From the table it is evident that the large majority of the population live in areas which are classified "normally" or "conditionally acceptable" noise environments. Only a small percentage, approximately 6 percent, are subject to "normally unacceptable" noise levels, and these are concentrated east of the Bayshore Freeway.

Future Noise Environment in San Carlos

Traffic on all major thoroughfares in San Carlos is projected to increase slightly over the next ten years. The major environmental noise increases will take place in the vicinity of the San Carlos

TABLE N-2

ESTIMATE OF POPULATION AFFECTED BY NOISE

CNEL NOISE LEVELS (dBA)	1977 POPULATION	PERCENT TOTAL POPULATION	PROJECTED 1995 POPULATION	PERCENT TOTAL POPULATION
Below 60	18,878	65.8	17,945	57.6
60-65	8,029	28.0	10,631	34.1
65-70	1,746	6.1	1,986	6.4
70-75	28	0.1	578	1.9
SUBTOTAL ABOVE 60	9,803	34.2	13,195	42.4
TOTAL POPULATION	28,681	100.0	31,140*	100.0

Airport and in the predominantly industrial and commercial zones of the City. Noise contours around the airport are projected to shift outward and the entire area between Old County Road and Industrial Road will likely increase to the 60 CNEL and above range. The commercial district and Central Business District between Holly Street, Laurel Avenue and El Camino Real will reach the 65 CNEL and above range according to projections. Residential receptors on either side of San Carlos Avenue, Alameda de las Pulgas, and Brittan Avenue will continue to experience noise levels of over 65 CNEL, with a shift outward of all contours.

Most of the vacant and developable land in San Carlos lies in the higher-elevation outlying areas in noise zones which are compatible with residential land uses. However, because the City is considering more intensive multiple land use alternatives, including residential uses within and surrounding the commercial district, the Noise Compatibility Chart should be used as a guideline for requiring noise studies for all future residential uses which fall within contours exceeding 60 dBA. Acoustic reports, including recommended mitigation measures to reduce interior noise levels to within the standards, should be required by the City in advance of issuing building permits.


*


Source: Edward L. Pack Associates (NOTE: ABAG Projections '79 estimate 1995 population to be 32,508).


LAND USE COMPATIBILITY
FOR
COMMUNITY NOISE ENVIRONMENTS

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE LEVEL (CNEL)					
	55	60	65	70	75	80
Residential - Low Density, Single Family Homes, Duplex and Mobile Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Residential - Multi-family	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Motels and Hotels	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Schools, Libraries Churches Hospitals and Nursing Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Sports Arenas, Outdoor Spectator Sports	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Playgrounds and Neighborhood Parks	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Office Buildings	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Industrial, Manufacturing, Utilities and Agriculture	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable

INTERPRETATION

 Normally Acceptable

 Conditionally Acceptable

 Normally Unacceptable


 Unacceptable

Table N-2 shows the approximate percentages of population projected to be exposed to various noise levels in their homes in 1995. The number of persons living in noise environments of over 60 CNEL is expected to increase from 34.2 percent in 1977 to 42.4 percent in 1995.

Interpretation of the Land Use Compatibility Chart

Normally Acceptable. The range of noise levels in this category are compatible with the specified land use type. No special noise insulation is required in buildings of conventional construction.

Conditionally Acceptable. The range of noise levels in this category are higher than those normally acceptable for the specified land use type. A detailed acoustic study should be undertaken to set forth design features that will reduce exterior noise levels and/or for construction to control the amount of exterior noise reaching interior use spaces.

Normally Unacceptable. New construction or development of the specified land use type should be discouraged. If development is to proceed a detailed acoustic study must be prepared and needed noise insulation features incorporated into the design.

Unacceptable. New development of the specified land use type should not be undertaken when the site falls within the range of noise levels in this category.

Noise Mitigation Methods

In situations where the range of noise levels are higher than that considered normally acceptable for a specified land use type it may be possible to reduce the effective noise level to achieve better compatibility. Each site has its own characteristics and problems, thus mitigation measures which are effective for one project may not apply to another. For this reason it is not appropriate to predetermine the method by which noise levels should be reduced or controlled throughout the community. Regardless of the mitigation measure or combination of measures which is used, it is almost always less costly to include the mitigation in the design phase rather than dealing with the problem later.

The measure or combinations of measures that can be used to mitigate noise fall into four general categories:

1. Site Planning
2. Architectural Treatment
3. Noise Barriers
4. Construction Modification

Site Planning. By taking advantage of the natural shape and contour of sites it is often possible to orient buildings and other uses in a way that will reduce or eliminate noise impact. Cluster development is conducive to noise reduction. The ways in which site planning can be used to reduce noise impacts are as follows:

- . Increase the distance between the noise source and the receiver.
- . Place non-noise sensitive land uses (parking lots, maintenance facilities, utility areas) between the source and the receiver.
- . Use non-noise sensitive structures (garages) to shield noise sensitive areas.
- . Orient buildings so outdoor areas are shielded from noise.

Architectural Layout. By attention to the types of uses being accommodated in a structure, the noise-sensitive uses can be moved to the quiet side of the building. Some typical examples are listed:

- . Put bedrooms on the side of the house farthest from roadways.
- . Do not locate outdoor balconies facing major roadways.
- . Design 'U' shaped buildings to shield patios.

Noise Barriers. Solid barriers between the noise source and the noise-sensitive area block out sound waves. The minimum acceptable surface weight for an effective noise barrier is 4 pounds per square foot (equivalent to 3/4 inch plywood) with no cracks or openings. To be effective the barrier must interrupt the line of sight between the noise source and the receiver. Noise barriers are created by topographical features in some situations. Earth berms can be created by grading to achieve the same result. It should be noted that short barriers are not effective regardless of height because sound waves will pass around the end of them and still reach the receiver. This effect, called flanking, can be minimized by bending the wall or barrier back from the noise source at the ends of the barrier.

Construction Modification. Indoor noise levels due to exterior noise sources can be controlled by the noise reduction characteristics of the building's shell. In general, windows and doors are the weakest links in the acoustic skin of a building. The amount of insulation and sealing required depends on the amount of noise reduction required. The following approaches may be considered:

- . Use solid core doors having an acoustic door gasket.

- . Use double paned glass or gasketed window systems.
- . Add insulation material to walls, ceilings and floors.

NOISE ELEMENT POLICIES AND PROGRAMS

Noise Element Policies

The following policies are set forth to help guide decision making with regard to noise impacts in San Carlos:

1. Land use decisions shall be based on the Noise Compatibility Chart and acoustic reports required for all developments in locations where noise levels exceed the "normally acceptable" range for specified land use types. If recommended in the report, mitigation measures shall be required as conditions of project approval.
2. A detailed acoustic report shall be required in all cases where hotels, motels and multi-family dwellings are proposed in areas exposed to exterior 60 CNEL or greater. If recommended in the report, mitigation measures shall be required as conditions of project approval.
3. Consideration shall be given to establishing noise reduction programs for high impact noise areas that are already developed.
4. If complaints about noise increase in the future, procedures for dealing with complaints in the community will be established.
5. The Noise Contour Map shall be updated with site-specific measurements, duplicating those taken for the 1975 Noise Element. The update can be conducted as part of the environmental review process for those project proposals which require noise studies.
6. Noise generated at San Carlos Airport shall be monitored and any significant increase in noise level shall be evaluated for its effect on nearby land uses. Should noise levels exceed the CNEL standards established herein, mitigation measures shall be required at the source to reduce the levels to acceptable ranges.
7. A noise analysis, including recommended mitigation measures, shall be required for new residential uses located within the 55 to 60 CNEL impact area of the San Carlos Airport.
8. The City of San Carlos shall impose height restrictions in accordance with the San Carlos Airport "Hazard Zoning Plan" in the vicinity of the San Carlos Airport.

Programs for Noise Element Implementation

Below are listed both existing and proposed action programs for Plan Implementation. Reference is made as to whether the program is existing or proposed, and the noise policies which are affected by its operation.

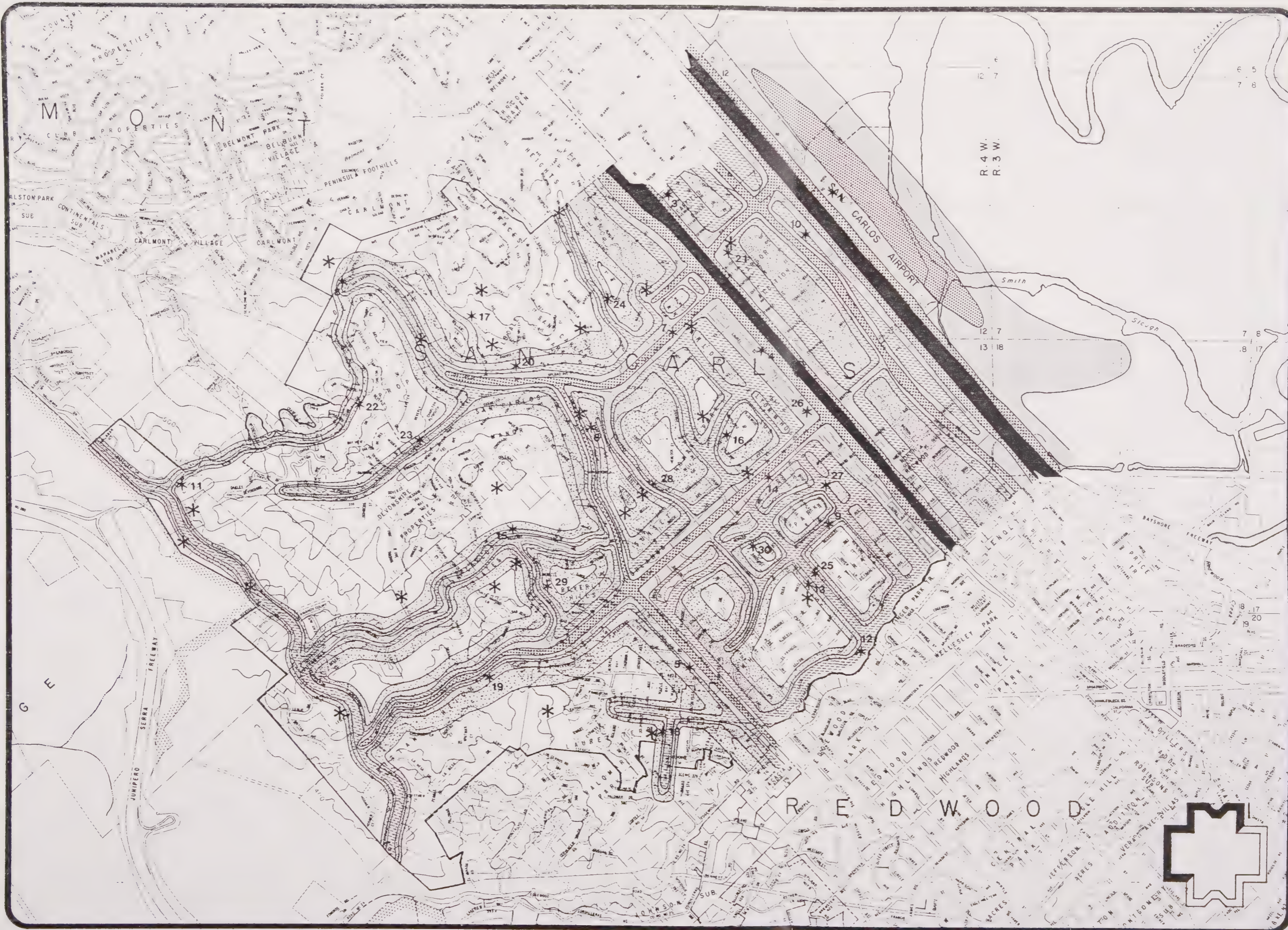
California Environmental Quality Act (CEQA) Environmental Review Procedures

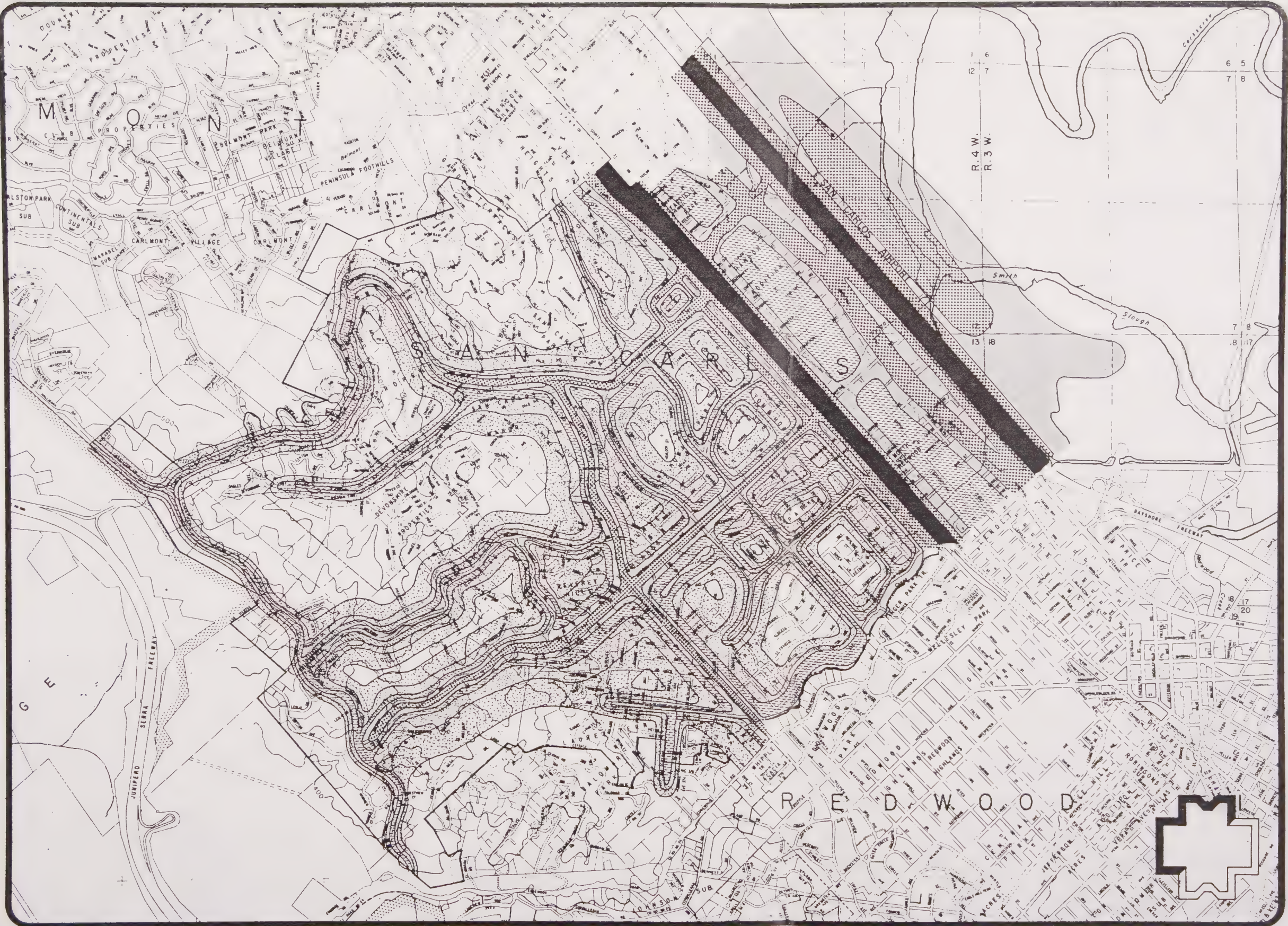
In cases where an initial study of a project indicates that noise may be a significant impact, an acoustic study is undertaken and noise mitigation measures recommended in the EIR. (Existing Program, Policies 1, 2 and 5 Implemented)

Project Review. Review of proposed projects by Planning and Building Department personnel is routinely performed. This phase of planning procedure is the most appropriate place to deal with detailed acoustic reports, design mitigation measures and technical review of the noise impacts and acoustic acceptability of the project. (Existing Program, Policies 1, 2 and 5 Implemented)

Inspection of Buildings. A program of inspection of buildings, particularly in multiple land use zones, is an ongoing activity of the Building Official. An effort should be made to recommend additional noise insulation features for buildings subject to unacceptable noise levels each time construction and renovation occurs. (Recommended Program; Policy 3 Implemented)

Community Noise Ordinance. Noise complaints in the community of San Carlos are not frequent enough to warrant a noise ordinance. If in the future they increase to a significant level, an enabling ordinance setting forth performance standards for various land uses and mechanical devices, measuring techniques to be used and procedures to be taken for the resolution of noise complaints in the community may be proposed. (Recommended Program; Policy 4 Implemented)





FUTURE NOISE LEVELS (1990)

0 800 2000
SCALE IN FEET

40-44
45-49

50-54
55-59

60-64
65-69

70-77

SOURCE: CITY OF SAN CARLOS, NOISE ELEMENT, 1978, EDWARD L. PACK AND ASSOCIATES; UPDATED WITH COUNTY AIRPORT LANDUSE COMMISSION, 1993, NOISE CONTOURS FOR SAN CARLOS AIRPORT.

COMMUNITY SAFETY ELEMENT

COMMUNITY SAFETY ELEMENT

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COMMUNITY SAFETY ELEMENT

Purpose

The Safety Element is intended to describe natural and man-made disasters which may pose a hazard to the residents of San Carlos, to plan for the elimination or mitigation of potential hazards where feasible and to help organize coordinated operations in the event of an emergency. Primary topics are fire prevention and control; crime prevention; hazardous materials storage and transportation; safety and incident response; provision of emergency services; emergency communications and evacuation.

Relation to Other Elements

The Safety Element is closely related to the Seismic Safety Element, the Circulation Element and the Land Use Element.

In general, all discussion of seismic hazards and mitigation is included in the Seismic Safety Element rather than here.

San Carlos and San Mateo County Emergency Operations Plans

San Carlos has developed an Emergency Operations Plan which is the basis of the community's civil preparedness and comprises a principal tool for implementing the Safety Element. The Plan, authorized by various state emergency acts and local ordinances, is periodically updated and drills covering emergency procedures are conducted from time to time. The San Carlos City Administrator's office, as well as the Fire, Police and Public Works Departments, are responsible for maintaining the Plan and for running the emergency operations located in the Police Department Offices.

In addition, the County of San Mateo, through the Area Disaster Office, maintains an Emergency Plan for the entire San Mateo Operational Area. The plan describes responsibilities for the coordinated response actions for the County and cities in event of a disaster. Within that document are found specific plans for earthquake response, hazardous materials incident response, and multi-casualty incident response.

Drills and simulation workshops in which all responsible personnel are involved in civil preparedness training for any kind of foreseen emergency scenarios are conducted routinely on both the city, county and integrated levels.

Purposes of the Plans. Emergency Operations Plans do the following:

- . Provide the basis for the conduct and coordination of operations and the management of critical resources during an emergency.
- . Establish a mutual understanding of authority, responsibilities, functions and operations of civil government during an emergency.
- . Provide a basis for incorporating into the City emergency organization non-governmental agencies and organizations having resources necessary to meet unforeseeable emergency requirements.

Major Topics Covered in the Plan. Emergency organization is aimed at the following objectives:

- . Provide for continuity of government.
 - Preservation of vital records.
 - Lines of succession.
 - Temporary seat of government (alternate locations).
- . Provide a basis for direction and control of operations.
- . Save lives and protect property.
- . Repair and restore essential systems and services.
- . Provide for protection, use and distribution of undamaged resources.
- . Coordinate operations with other jurisdictions.

Evacuation Routes

In the event of emergency the major arterial streets identified in the San Carlos Circulation Element Map would serve as the principal routes for evacuation of people out of hazardous areas and to safety. These routes would also serve as the principal routes for movement of emergency equipment and supplies. Of particular importance are those routes which parallel Highway 101 in the north-south direction since they provide a backup to the freeway in the event overpasses collapse or are blocked. The principal evacuation routes at present designation are:

- . Route 101
- . Route 280
- . El Camino Real
- . Edgewood Drive

- . Alameda de las Pulgas
- . Brittan Avenue

While there are no official comprehensive community evacuation plans on file with the City, the police and fire department are well-briefed, trained and continuously drilled in evacuation procedures. The South County Fire Department participates in an Industrial Emergency Council. One function of the organization is industry emergency preparedness training and development of evacuation plans for individual industrial sites which store or use hazardous substances. In 1981 a portion of a San Carlos residential area was subject to a public evacuation because of an hazardous substance incident. The emergency procedure was implemented and enforced in an orderly and timely fashion which preserved public safety and minimized inconvenience and property damage.

The City of San Carlos and South County Fire Department have demonstrated their preparedness in small scale emergencies and have received national attention and acclaim for their progressive accomplishments in hazardous substance incidence response. Likewise, state-of-the-art techniques and procedures for earthquake readiness are also practiced County-wide. However, the logistics of a large-scale public evacuation plan have not been formulated in San Carlos.

An example of an obstacle which could interfere with an orderly and safe mass evacuation of the area was presented by a spokesperson for the Police Department. A traffic barrier has been erected on Crestview Drive by the City of Belmont along their boundary with San Carlos. The barrier is effective for traffic control and noise control through that residential area, however because only emergency department staff hold keys to the barrier an element of time for unlocking the device must be figured into any evacuation formula which relies on the Club Drive/Ralston Avenue evacuation corridor. In most hazardous situations, time is of the essence. It is these types of issues which should be examined in a community - wide evacuation planning process.

Potential Emergencies

Four scenarios are presented to illustrate the types of emergencies which could occur in San Carlos.

Scenario One: Major Fire. In 1971 and again in 1976 grass fires swept through the hills of San Carlos. On those dates, there were no homes standing in the affected areas. Since then, new residential development has occurred in areas previously burned. As the new homes were built west into the hills, the access in emergency situations

has been improved by addition of new roads but the community exposure to potential wildland fire hazard has also been expanded. This danger is particularly severe in summer months when grass and brush are dry and when brisk winds from the north and northeast are blowing. Adequate fire breaks are important at the edges of developed areas. If planting around buildings is desired, fire retardant plant species should be selected from a list maintained by the City's Park and Recreation Office. Wood shake roofs should be avoided, particularly in areas subject to wildland fires. Fire movement from roof top to roof top is a potential danger. The fire department is involved in site plan reviews of any structures developed in San Carlos and they require that fire retardant construction materials are used in hazardous situations as a condition of project approval.

Fire safety is directly related to the following four factors:

1. Water Supply - Sufficient supply and pressure is necessary.
2. Accessibility - Availability of roads affects response time.
3. Land Slope - Steep terrain affects maneuverability; fire tends to spread faster on slopes than on flat ground.
4. Flammability and availability of combustible material.

The Wildland Fire Hazard Zone Map accompanying this plan element was compiled by the South County Fire Department to serve as an indicator of those portions of San Carlos in which project proposals will be subject to scrutiny for wildland fire safety. Building materials, landscaping species, project access, and other standard fire safety code guidelines may all be regulated as condition of project approval in the Wildland Fire Hazard Zone.

Scenario Two: Major Earthquake. The 1906 earthquake on the San Andreas Fault west of San Carlos is the most severe earthquake experienced in San Carlos within historic times. Ground shaking associated with such a major earthquake is the greatest hazard to San Carlos. An earthquake of Mercalli Intensity VIII could cause general fright through the community and could result in various types of damage or collapse of buildings, structures and unreinforced walls. The secondary effects of an earthquake, fire and utility disruption, could also occur.

An earthquake in excess of the above intensity or resulting in ground displacement is not highly likely in San Carlos. However, if one

occurred on the San Andreas Fault, the following factors could cause the greatest disruption to San Carlos:

- . Break in the main water supply to San Carlos from the Hetch-Hetchy importation system would result in reliance on local supply, which is limited.
- . Damage to sanitary and storm sewer systems could further restrict the use of potable water and create public health risks.
- . Collapse of the San Mateo and/or Dumbarton Bridge approach ramps due to liquefaction; damage to the Bayshore Freeway, Interstate 280, El Camino Real, or various freeway overpasses, or landslide blocking of Route 280 or Edgewood Drive could result in partial isolation of San Carlos from other areas.
- . Damage to power lines and telephone lines would result in general loss of communication, thus reliance on local power generators and citizen band radio.

Scenario Three: Hazardous Chemical Spill or Threat of Industrial Explosion. The South County Fire Department, serving the Cities of San Carlos and Belmont, contains the second greatest number of industrial facilities in the Bay Area, second only to the City of South San Francisco. The San Francisco Bay Area is a national leader in high technology manufacturing. Inherent in most high technology manufacturing processes is the use of hazardous materials. The number of industrial sites and the frequency of hazardous materials handling is bound to lead to occasional small-scale accidents. These incidents, of which the Fire Department keeps close account and records, seldom endanger any of the population. Instead, they occur in an industrial setting in the presence of personnel who are trained to respond effectively for safe and timely clean-up and disposal.

In 1981 a spill occurred in the City of San Carlos which necessitated the evacuation of the surrounding area. The evacuation took place with orderliness and successfully resulted in the prevention of risk to lives, health or property. Spills in the industrial setting, similar to the 1981 incident, have potential of occurring in the future. Additionally, there is a potential for community exposure to chemicals and fumes should a truck carrying waste material be damaged in an accident on the major highway system through San Carlos en route to a disposal site.

Fortunately, San Carlos is involved in one of the most innovative and advanced task forces in the nation for hazardous material incident response and preventative measures. South County Fire Department's active participation in the South County Industrial Emergency Council (SCIEC) means that local public and private sectors are working in cooperative programs for coordinated emergency services. SCIEC has been awarded a grant as a Subcontractor to the Association of Bay Area Governments (ABAG). Their job is to analyze personnel training needs, organize a prevention program and assist ABAG's training subcommittee in developing a model for regionwide standards based on the San Carlos/Belmont area programs. Further funding is being sought by SCIEC to establish a regional library resource center, to acquire equipment (i.e., two hazardous material response vans which are currently on loan), and to develop a wider emergency response training program for industry and government agencies.

Community Safety, in this scenario, is related directly to:

1. Industry Responsibility
2. Public and private sector coordinated response
3. Driver Responsibility
4. Land use adjacent to the highway corridor and industrial areas.

A map showing the location of all industrial sites in the City which use hazardous materials accompanies the Plan Element.

Scenario Four: War Emergency. San Carlos could sustain damage from a wartime attack in the Bay Area. Depending on the nature of the war emergency the result could be physical damage to buildings and facilities and/or injury to persons. San Carlos relies on local hospital facilities, as well as those in Redwood City and Menlo Park, thus communications and evacuation routes in these directions are important.

Emergency Service Capability in San Carlos

Fire Prevention and Control Services

The South County Fire Department operates administratively out of its headquarters at San Carlos City Hall. Branch stations are located at the following places:

STREET CORNER LOCATIONCITY

Cipriani and Ralston	Belmont
Ralston and Granada	Belmont
Brittan and Industrial	San Carlos
Laurel and Holly	San Carlos
Alameda and Howard	San Carlos

The Fire Department serves all areas within the city limits of Belmont and San Carlos, as well as the unincorporated Harbor Industrial area. Service is extended through cooperative agreements to the unincorporated county areas of Devonshire, Harbor Industrial and to Redwood Shores. The Department participates in mutual aid agreements with the City of San Mateo, County of San Mateo, City of Redwood City and the Palomar Park Volunteer Fire Department.

Response Time. Fire Department response time to most developed residential and commercial areas in San Carlos is within three to four minutes. More remote residential development in the outlying areas near Crestview and Club Drive can be reached in five to nine minutes.

Fire Loss. Figures compiled over the last six years indicate total fire loss for the South County District.

<u>YEAR</u>	<u>TOTAL \$ VALUE OF LOSSES</u>
1976	\$2,258,700
1977	1,555,565
1978	1,478,365
1979	755,720
1980	1,367,800
1981	1,367,800
	approximately 2,000,000

Fire Equipment. Fire equipment for the district includes four pumper unit engines, one ladder truck, one rescue truck and a battalion chief wagon equipped for use as a command post in large fires.

Fire Control Limitations. The entire City of San Carlos has an insurance rating classification of Zone 3.

In general, the remote areas of steeper slopes are more difficult to serve than are the flatter areas. Response time could be shortened for the outlying areas by the opening or relocation of a station. The possibility of a new station site is currently under review by the department.

Two sided on-street parking in the older residential districts of San Carlos can reduce street width and restrict emergency access and turn-around.

Relation to Other Departments. The Fire Department coordinates with the City Engineer regarding water supply for fire suppression purposes. First aid and rescue activities are shared with the Police Department. Review of site and building plans is coordinated with the Building and Planning Departments. Input from the Fire Department on development projects is particularly relevant for ensuring general access, turn-around, and for ensuring locations can be readily identified through street names and numbering.

Interagency coordination in the event of major emergencies includes cooperation with the County Area Disaster Office, the California Highway Patrol and various other public and private organizations.

Fire Safety Standards. The following standards for ensuring fire safety in developed areas are utilized in the City:

- . All hydrants have two 2-1/2 inch and one 4-1/2 inch valves.
- . Hydrants are placed a maximum of 500 feet apart on streets and at the ends of cul-de-sac streets.
- . Water supply capability should provide for a delivery of 2500 gallons per minute for a period of 2 hours with a residual pressure of 20 pounds per square inch.
- . Installation of interior sprinkler systems is required for any building over 1,000 square feet in size.

Police Services

The San Carlos Police Department operates out of a single Central Station at City Hall. The Department serves all areas within the city limits and, under mutual aid agreements, extends service outside the City. The Police Department is responsible for managing the Emergency Operating Center in the basement of City Hall from which communications, response strategy and rescue activities would be handled during a major emergency.

Work Program Statistics. Figures compiled by the Police Department for statistical analysis indicate that the number of calls, citations, accidents and crimes during 1978-1982 occurred more frequently than the five-year average indicated.

TABLE CS-1: POLICE WORK PROGRAM STATISTICS

Selected Categories	Calendar Year							Five Year Average
	1976	1977	1978	1979	1980	1981	1982	
Radio Calls	12,944	14,169	12,944	14,542	14,433	14,391	14,011	14,064
Traffic Citation	11,541	13,616	11,541	11,527	11,680	13,509	11,219	11,895
Traffic Accidents	611	610	611	718	698	769	841	727
Serious Crimes	1,256	1,016	1,256	997	1,182	1,119	1,165	1,144

Police Equipment, Staff and Capabilities. The Police Department is staffed with 36 sworn officers. Of these, five are Sergeants, three are Lieutenants and one is the Chief of Police. Their vehicular equipment includes 11 marked patrol cars, five unmarked cars, one motorcycle, one jeep and one station wagon which has the capability to function as a field command post, if necessary, such as in the event of an evacuation. The City has access to two helicopters through the interagency cooperation of the California Highway Patrol and KRON T.V., Channel 4.

Police Headquarters in City Hall is also the Emergency Operations Center for San Carlos. The building has been specially designed to

withstand earthquake shaking, wartime emergency and other disasters. The communication center is housed in the basement. The basement facility is designed so that numerous supplementary telephone lines can be immediately connected to receive the increase of incoming calls for aid from the public during any disaster. The basement is further equipped with maps, aerial photography, video equipment, chalk boards and other tools for planning and responding to significant crises. Under normal circumstances the Emergency Operations Center is used as a training center. The Emergency Services Staff practice regular drilling exercises for response to and preparedness for unusual occurrences, such as hostage negotiation and airport disasters. They continually update their skills with new technique training classes, films and workshop participation. Library resource information, such as single-purpose emergency plans and manuals, are on file at police headquarters.

Accessibility in some unincorporated areas during the rainy season is made difficult if the roads of the area are unpaved. There are some examples of this situation in the Devonshire Canyon area.

Off-street parking is an issue in some older residential neighborhoods of San Carlos. Emergency vehicle access is reduced by residents parking on both sides of some relatively narrow streets.

The Police Department is considering the purchase of an automated information system for handling various department statistics. Analysis for crime prevention, budget planning, record keeping and many other administrative functions could be vastly improved with this addition.

Relation to Other Departments. The Police Department shares the responsibility for providing first aid and rescue services with the Fire Department. Posting of speed limit signs, stop signs and other traffic safety devices is coordinated with the Public Works, Streets Division. Input from Police on site and building plans is requested from the Building and Planning Office. This input should be regularly sought in order to avoid creating situations where emergency access is hindered or lack of security invites crime.

SAFETY ELEMENT POLICIES AND PROGRAMS

Safety Element Policies

The policies on the following page are set forth to help guide decision making with regard to safety in San Carlos.

1. The City recognizes the potential danger to public safety that may result from natural or man-made causes and seeks to minimize the public risk from such hazards.
2. The Hazard Map which accompanies this plan element serves as a guide to both City officials and the public. Land use decisions which are likely to expose the public to a significant degree of hazard shall be analyzed through the environmental review process and when needed, measures will be required to mitigate hazard exposure through design criteria and standards enforcement.
3. Emergency evacuation routes are set forth in this General Plan element, and a community evacuation plan will be formulated.
4. The City shall continue to undertake regular evaluation of safety service limitations to ensure that adequate levels of service are provided.
5. Emergency Service Departments shall continue their current high levels of effort in areas of emergency preparedness training, action plan development and drills, education in new techniques for emergency response and prevention and inter-agency cooperation for public safety.

Programs for Community Safety Element Implementation

Below are listed the programs for Plan Implementation. All are existing programs. Reference is made as to the safety policies affected by the program.

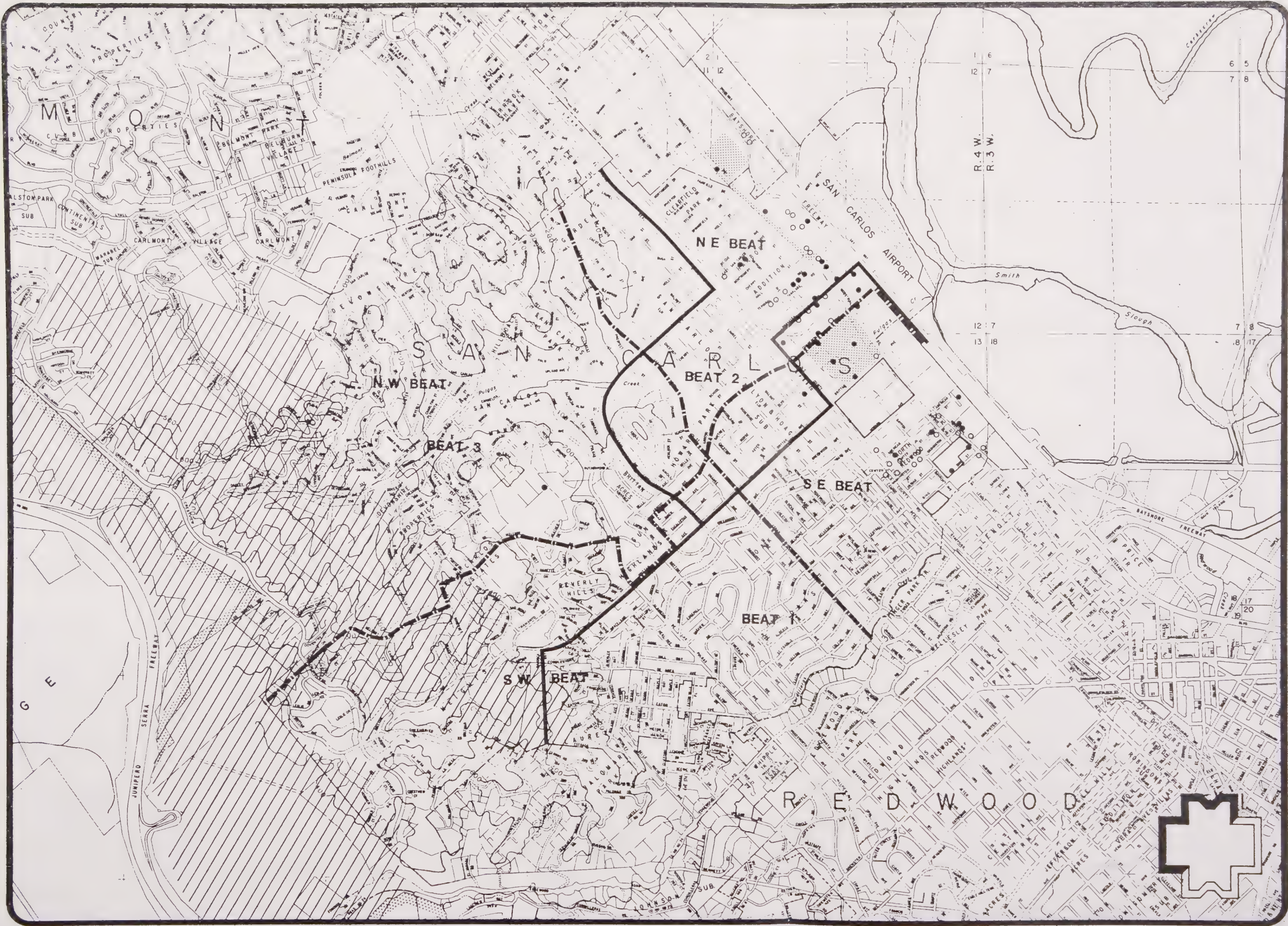
California Environmental Quality Act (CEQA) Environmental Review Procedure. The initial study for any applicable project takes into account the effects of the project on available safety resources and the relative safety of the project itself. (Existing Program; Policies 1, 2 and 4 Implemented).

Project Review. Review of proposed projects by emergency services personnel with input to the Building and Planning Office is routinely

performed. This procedure provides information for use in design review, zoning administration and subdivision ordinance administration. (Existing Program; Policies 1, 2 and 4 Implemented).

Emergency Operations Plan. The Plan is the basis of the City's Emergency Preparedness Planning. Updating is performed by the City Manager's Office with help from all departments; drills involve all personnel. The Plan is in need of annual revision, to include a community evacuation procedure. (Existing Program - Amendment Recommended; Policy 1, 3, 4 and 6 Implemented)

Emergency Service Department Programs. The Police and Fire Department of San Carlos participate in several programs which improve inter-jurisdictional cooperation, disaster response and preparedness, public awareness and private sector education. Examples of programs in which emergency service staff will participate in the future include the South County Industrial Emergency Council; San Mateo County Incident Command System; South County Academy; numerous state and regional workshops, seminars and training classes; and ongoing community relation and education projects. (Existing Program; Policy 6 Implemented).



COMMUNITY SAFETY FACTORS

0 800 2000
SCALE IN FEET

POLICE PATROL AREAS

- Three Beat System
- - - Four Beat System

HAZARDOUS MATERIAL LOCATIONS

- Less Significant
- More Significant

WILDLAND FIRE HAZARD AREA



CITY OF SAN CARLOS
GENERAL PLAN ENVIRONMENTAL IMPACT REPORT

SEPTEMBER, 1983

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GENERAL PLAN E I R

Purpose

The California Environmental Quality Act (CEQA) provides an opportunity for public officials and interested citizens to review the potential effects of development proposals prior to the governmental action on those proposals. The review procedure allows information to be made available in advance of decisions to approve or deny significant projects and allows disclosure, consideration and, if possible, avoidance or reduction of significant environmental impacts from the governmental action.

CEQA allows that no separate EIR be required on a local general plan if the general plan addressess all points required to be in an EIR, and if the document contains a special section identifying where in the general plan document each required point is addressed.

Relationship to the General Plan

The intent of the San Carlos General Plan is to include environmental analysis in each of the plan elements rather than in a separate EIR document. This environmental document is an appendix to the General Plan. It consists of an index to those locations in the plan where the environmental setting, impacts and mitigation are included. Together, the San Carlos General Plan and this appendix should provide an overall framework against which subsequent, more specific development plans can be evaluated.

Level of Detail

There is a distinct difference between the level of detail of a general plan and that of precise plans for actual development at any specific location described in the general plan. Similarly, the EIR for a general plan is intended to identify major critical concerns on a citywide basis. This early warning system permits public officials and interested citizens to be aware of specific information which should be further explored and included in EIR's prepared for specific development projects.

The City is currently considering, as a method of streamlining the CEQA process for future development proposals, the preparation of an automated Master Environmental Assessment (MEA) for the entire City which would contain much more specific environmental data than is contained in this General Plan. The maps and data contained herein would serve as the framework for the MEA.

DESCRIPTION OF THE PROJECT AND SETTING

Project Description

The project consists of an update and revision of the San Carlos General Plan. The revision is intended to supersede the General Plan of 1978, as amended. No significant departure from previous policies has been made in this plan update.

Project Setting

See Planning Context, Introduction page I-1; Regional Setting, Introduction page I-1.

Plan Study Area

See Regional Setting description, Introduction page I-1, and all General Plan Maps for City Limit and Sphere of Influence boundaries.

Whom the Project Serves

See: The Planning Process, Preface page, i; and, various profiles of the San Carlos population in the Housing Element.

DESCRIPTION OF THE PLAN AREA ENVIRONMENT

Urban land use patterns are described in the Land Use Element; natural resources, i.e. biotic resources and recreational and visual amenities are discussed in the Conservation Element; geologic and soil descriptions are contained in the Seismic Safety Element; visual resources are also discussed in the Scenic Highways Element, and the recreational section of the Land Use Element. A detailed index to information is included within the Table of Contents of each element.

ENVIRONMENTAL IMPACTS OF THE GENERAL PLAN

Impacts of development are secondary effects of the General Plan. Each of these plan elements includes discussion of potential impact from these secondary sources. The more significant impacts are noted below:

Topographic Modification - Any project built on land exhibiting a slope of ten percent or more, will require a site-specific geotechnical report as a matter of long-standing city policy, and is subject to Hillside Development Criteria as established in the

Land Use Element. This limitation helps reduce the amount of grading so that erosion and siltation are less likely to occur and it also minimizes visual scars which result temporarily even if a planting program is included as part of a development project.

Climatic Modification - Implementation of the General Plan will not have a significant effect on the macro climate of the City, but will have an influence on the air quality due to additional automobiles and industry. The City is currently initiating a program of air quality monitoring in conjunction with BAAQMD. A computer program is being introduced which will allow the City to estimate the line source impacts of any future traffic increases and to monitor the individual and cumulative project impacts according to their conformance with regional standards.

Micro climates throughout the City can be affected by construction of multi-level buildings, the planting of landscaping, and the paving of formerly unpaved areas. These effects will undoubtedly occur in the downtown multi-family districts as higher intensity land uses gradually phase into existence. The preservation of solar access is a subject which is addressed in the Multi-Family Areas Study, a supplemental report to the General Plan.

Geologic Effects - The Seismic Safety element will facilitate the process of avoiding development in hazardous areas and reiterates those policies requiring geotechnical studies to determine adequate safety measures for any areas which are known to be susceptible to landslide, flooding, settlement or severe earthquake shaking. These constraints are mapped and discussed in the Seismic Safety Element.

Biological Impacts - The Open Space and Conservation element identifies various habitat areas which exist within or in proximity to San Carlos, in the exhibit titled Biotic, Historic and Archeologic Resources. Policies and programs for protecting and acquiring open lands for public use and enjoyment are discussed in that plan element.

Traffic - Traffic and circulation standards and projections are provided in the Circulation and Scenic Highways Element.

Socio Economic Impacts - Employment, housing and age characteristics are discussed in the Housing Element, as well as goals, policies and programs for reaching local and regional housing goals.

Noise - Existing and projected future noise levels are documented

in the Noise Element, and measures for maintaining land use compatability within various contours are presented therein.

Air Quality- Local and regional air quality are discussed in the Open Space and Conservation Element. A program for monitoring and cooperating with Regional agencies in meeting standards is described in the Multi-Family Areas Study.

SIGNIFICANT UNAVOIDABLE EFFECTS RESULTING FROM IMPLEMENTATION OF THE GENERAL PLAN

An important function of the General Plan is to establish a common understanding of what amenities will be given up, what features will be protected and what will be improved in the future. The Plan allows an opportunity to learn about and thus avoid adverse environmental effects of uncontrolled development. Any urban development will have the effect of reducing open land. Any redevelopment will increase the intensity of land uses or change the type of land uses from those now in existence. The principal effects of implementing the General Plan have been described in the Plan and as summarized below.

Physical Changes

- . While most hillsides and canyons of San Carlos have been developed or acquired for open space purposes, some areas remain which have development potential. The development of these areas will result in reduction of visual and biotic open space resources, possible runoff volume increases, increased erosion and siltation of waterways, and increased potential for flooding.
- . Higher intensity residential development in the downtown district will likely impact existing views or will result in traffic increases.
- . There will be increased potential for greater runoff volumes, velocities and amount of silt reaching salt water habitats along the bay shoreline due to impervious roof and paving surfaces and development of slopes.
- . Increased expansion and development on properties along the bay shoreline, including expansion of the San Carlos Airport, Solid Waste Transfer Station and SamTrans Maintenance facility, will directly reduce open space.

Biological Changes

- . New development and roadways creating barriers to the movement of wildlife.
- . Introduction of new plant types and irrigation; possible loss of natural vegetation.
- . Possible increased siltation of waterways may affect fish, shellfish and birds.

- . Shoreline development for public services and facilities will directly and indirectly impact shoreline wildlife habitats as inventoried in the Open Space and Conservation Element.

Noise

- . Circulation related noise will increase in the future.

Air Quality

- . Circulation related air quality impacts will increase in the future.

Socio-Economic Changes

- . Increased residential densities in the downtown area will create an additional local demand for goods and services as well as a public transit, public works and circulation improvements.

Comparison of Alternatives

In general, this General Plan Update will allow a decrease in land use intensity and population at buildout from the previously adopted plan. Therefore, some impacts identified in the previous General Plan EIR, i.e., air quality, noise, and traffic, will be mitigated as a result of this General Plan revision. Mitigation measures addressing the previous General Plan were documented in an EIR prepared by Earth Sciences Associates in 1978. That document has been incorporated by reference into the General Plan update.

REFERENCE	SAN CARLOS PLAN	OTHER PLANS AND PROJECTIONS
Population Growth by the Year 2000	From 24,710 residents in 1980 to 25,212 in the year 2000.	1978 Plan - Population growth to 33,350 by the year 2000. 1983 ABAG Forecasts- Population growth to about 27,500 by the year 2000.
Total Dwelling Units by the Year 2000	From 10,350 units in 2000, not including redevelopment of the Downtown Multi-Family Area.	1978 Plan - 13,077 units by 2000, not including higher intensity development in the Multi-Family Area.

REFERENCE	SAN CARLOS PLAN	OTHER PLANS AND PROJECTIONS
Employment	Broaden the diversity and protect existing local employment base by promoting and encouraging compatible commercial and industrial uses. From 16,555 jobs in 1980 to 18,474 jobs in 2000.	1983 ABAG Forecasts - From 16,663 total employment in 1980 to 19,000 in 2000.
Growth Form	Slight changes in the boundaries of land use zones and the creation of subcategories within land use categories. Redesignation of public properties, primarily surplus school sites, and a solid waste disposal site west of the Bayshore Freeway.	1978 Plan - Balance between industrial, commercial and residential land uses with the commercial land use along El Camino Real acting as a buffer between the industrial and residential zones.
Geological and Soil Considerations	No changes from 1976 Plan, except that element maps are all transferred to a compatible scale and format with other General Plan Maps.	1978 Plan - Recommendations from a report by Earth Sciences Associates are incorporated and the element is consistent with San Mateo County's Seismic Safety Element, incorporated by reference.
Noise	Land Use Compatibility Guidelines are set forward for use in future development. Existing and Projected Noise Contours are now mapped at a compatible scale with other Plan maps. Program for updating and monitoring noise levels is specified.	Existing and Projected Noise Contour maps and goals for interagency cooperative effort to attain and preserve a quiet environment are iterated.

REFERENCE

SAN CARLOS PLAN

OTHER PLANS AND PROJECTIONS

Traffic and Circulation

Complete U.S.101/Holly Street interchange. Add new partial interchange at Brittan Avenue/U.S.101. Connect Crestview Drive with I-280. Replace Howard Avenue crossing of SP tracks with at grade crossing at Brittan Avenue.

1959 Plan - Established basic circulation system for developing city.

Natural

Parks and Open Space - Participate with Mid-Peninsula Regional Open Space District to acquire and develop the Hassler Health Home Property, and to acquire the Benedetti Property as an adjunct to the Hassler Regional Park. Preserve neighborhood recreation facilities despite public school closures, including a minimum of 30 percent of San Carlos High School.

1978 Plan - Preservation of open space lands west of Crestview within City Sphere of Influence.

Air Quality - Purchase and initiate a computer model, recommended by BAAQMD, for use in any future environmental analyses for monitoring project-by-project and cumulative impacts to attainment of regional air quality standards. (Refer to Multi-Family Areas Study).

1978 Plan - Cooperate with BAAQMD in attaining regional air quality standards.

REFERENCE

Community
Image

SAN CARLOS PLAN

Emphasis on preserving and enhancing San Carlos' balanced land use pattern, including measures to protect existing and expand future residential uses, promote and encourage the commercial downtown area as source of employment and a community focal point, encourage diversified industrial uses and redevelopment, obtain regional open space property, and to ensure compatible and appropriate reuse of surplus public lands.

OTHER PLANS AND PROJECTIONS

1976 Plan - Encourage orderly balanced development of an expanding municipality, particularly westward residential development.

MITIGATION MEASURES PROPOSED TO MINIMIZE ENVIRONMENTAL IMPACTS

The approach to the General Plan is to anticipate potential environmental problems and avoid as many as possible at the General Plan level. The intent is to help guide subsequent specific development away from sensitive environmental areas. A detailed EIR must still be required for significant specific developments in order to analyze those characteristics of each site which are beyond the scope of the General Plan. The choice and effectiveness of implementation devices will have the most effect on how well adverse effects can be mitigated. Much can be, and has been, accomplished through the zoning and subdivision review procedures set forth as implementation programs in many of the General Plan elements. Mitigation of the significant unavoidable effects described in the previous section of the EIR are presented in the 1978 EIR and/or included as standard or specific conditions of approval for individual projects. Mitigation measures for impacts to Bayshore habitats as a result of public works and facilities improvements have been addressed in regulation documents and plans by the County Airport Land Use Commission, in the County Master Solid Waste Disposal Site Plan and by the regional transit authorities.

IRREVERSIBLE ENVIRONMENTAL CHANGES INVOLVED IN THE IMPLEMENTATION OF THE SAN CARLOS GENERAL PLAN

To the extent the General Plan would permit further urban development in San Carlos, it will contribute to the following irreversible changes:

- . The consumption of finite resources, including non-renewable energy and minerals for construction;
- . A substantial commitment, once development has occurred, of non-renewable energy resources and community services to maintain the area in an urban use;
- . Further degradation of surface water quality due to increased urbanization in the hills;
- . Commitment of open space areas and wildlife habitat to urban uses;
- . Increased vehicular traffic with concomitant air quality and noise impacts;
- . Increased surface runoff due to a larger amount of permeable surfacing.

GROWTH INDUCING IMPACTS RESULTING FROM PLAN IMPLEMENTATION

The General Plan, as updated, is relatively growth controlling in comparison to the previously adopted General Plan. Whereas the previous Land Use Element designated the Hassler Health Home and adjoining property for single-family residential development, the current element has set aside the property for acquisition of a Regional Open Space District. The total build-out of the community is projected as lower than that in the previous plan, population and employment projections are reduced below previous projection levels. One goal of the Housing Element is to encourage residential development and to remove governmental constraints to housing construction whenever appropriate. To this extent the General Plan does promote growth and development, in accordance with State-wide housing goals and priorities.



LOCAL SHORT-TERM USE OF THE ENVIRONMENT VERSUS THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

San Carlos is now largely urbanized. Development under the General Plan will not significantly affect the uses or productivity of these developed areas. Most of the remaining vacant land is located in the Western Hills; the development of housing in the hill area would remove much of the remaining open space and wildlife habitat value of this land. Low density housing for above-moderate income families would be provided in its place. Likewise expansion of airport facilities and other public facilities east of the Bayshore Freeway will remove much of the open space and wildlife habitat value of this Bayshore area. Regionally significant public services will be provided as a tradeoff.

